



Third West air monitor results and implentation plan update. Shepherd, Michael

to:

Craig Bamitz (cbamitz@utah.gov), Joyce Ackerman 08/26/2011 03:57 PM

Cc:

"Clegg, Benjamin M."

Hide Details

From: "Shepherd, Michael" < Michael. Shepherd@PacifiCorp.com>

To: "Craig Bamitz (cbamitz@utah.gov)" <cbamitz@utah.gov>, Joyce Ackerman/R8/USEPA/US@EPA

Cc: "Clegg, Benjamin M." <Benjamin.Clegg@PacifiCorp.com>

5 Attachments











218343-1.pdf 218701-1.pdf 218789-1.pdf 219017-1.pdf Third West Contractor Implemenation Plan .pdf

Craig and Joyce,

Attached are the results from the air monitors we have collected to date. I suggest we provide these reports to you on a weekly basis. If a report comes back positive we will notify you immediately.

I also updated the Implementation Plan to include both of you in the second paragraph of the introduction,

"The means and methods below were created based on available information and known site conditions. If site conditions change, means and methods will be immediately communicated to Joyce Ackerman and Craig Bamitz prior to implementation."

Let me know if you have any questions or concerns.

Thanks,

Mike Shepherd

Project Manager Rocky Mountain Power - Major Projects 801.220.4584 Office 801.631.1310 Cell 801.220.2797 Fax michael.shepherd@pacificorp.com



August 9, 2011

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 218343-1 None Given

Project Description:

None Given

Eldon Romney R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 218343-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 218343-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given **Client Project Description:**

None Given

Date Samples Received:

August 8, 2011

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

August 9, 2011

| Client ID Number | Lab ID N | umber | Area Analyzed | Air Volume Sampled | Number of Asbestos Structures Detected | Analytical Sensitivity | Asbestos Concentration | Filter Loading |
|----------------------------|-------------|-------------------------|------------------|--------------------------|--|---------------------------|---------------------------|-------------------|
| | | | (mm²) | (L) | | (s/cc) | (s/cc) | (s/mm²) |
| 3W-080411-E | ĒΜ | 777390 | 0.0880 | 956 | ND | 0.0046 | BAS | BAS |
| 3W-080411-W | EM | 777 3 9 1 | 0.0880 | 946 | ND | 0.0046 | BAS | BAS |
| 3W-080411-N | EM | 777392 | 0.0880 | 952 | ND | 0.0046 | BAS | BAS |
| 3W-080511-E | EM | 777393 | 0.0880 | 944 | ND | 0.0046 | BAS | BAS |
| 3W-080511-N | EM | 777394 | 0.0880 | 988 | ND - | 0.0044 | BAS | BAS |
| 3W-080511-S | EM | 777395 | 0.0880 | 960 | ND | 0.0046 | BAS | BAS |
| 3W-080511-W | EM | 777396 | 0.0880 | 958 | ND | 0.0046 | BAS | BAS |
| Blank (Sample Not | EM | 777 3 97 | NA | 0 | NA | | | |
| Labeled) | | | | | | | | |
| Blank (Sample Not Labeled) | EM | 777398 | NA | 0 | NA | | | |

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity

Effective Filter Area = 385 sq mm

Average Grid Opening in mm² = 0.011

DATA QA

Due Date: 8-91 Due Time:

REILAB RESERVOIFS Environmental, Inc. 5801 Logen St. Oenvar. CD 40215 · Ph; 303 964-1936 · Fex 303-477-4275 · Toli Fres :866 RESI-ENV

| | . <u> </u> |
|------|------------|
| Page | 1 of |

| · | INVOICE TO: (IF | DIF | ERI | ENT) | | | | | | | | | CON | TAC | | | ATION | | | | |
|--|--|-----------------|--|----------|---------------------|---|-----------------|------------------------------------|---------------|-------------------|----------------------------------|--|----------|------------|-------------|----------------|-------------------|-----------------------|--|----------------------|---------------|
| Company: KE a Emiremmental | Company: Address | | | | | Con | tect: | Dav | 6 (2 | 85 | elle | ¥ | | | | | | the Kore | | | |
| Address: 47 W 9600 S. | Addess | | | · | | Fax | 7 | 019 | 541 | <u>-(ť</u> | 35 | | | | | Phone: Fext | 801 | 28-52 | 19 | | |
| Sindy, U. 84070 | | | | | | | pager | | | | | | | | | Cell/peg | <u> </u> | | | | |
| Project Number aid/or P.O. 4; | <u> </u> | | | | | | | Oslive | ra Us I | Email A | Miss | | | | | | | | | | |
| Project Oedcriphryl.adettan: | | | | | | | | | 3 | | | renvir | 0.60 | m | | | | | | | |
| ASBESTOS-LABORATORY HOURS: Weeksaya: 7am - 7pm | | | | | | REQU | ST | ED A | NAL | YSI | 8 | | | | VAL | D MA | TRIX | CODES | L | AB NOTE | S: |
| M.M / PCM 7ENRUSH (Same Day) PRIORITY (Nam Day) (Ruch PCM = 2hr, TEM = 6hr.) |)STANDARD | | | | | | | | П | | | | - | | lir ≈ / | | | Bulk = B Paint = P | 1 | | |
| CHEMISTRY LABORATORY HOURS: Weekdaya: 8am - 5pm | | 1 | | 1 | | 1 1 | | | | } | | 111 | - | | oil = | | | Wige = W | + | | |
| Metal(e) / Dust RUSH 24 hr 3-5 Oay | | 1 | 관 | | | ! | | | | | | 111 | - H | | ab = (| | | F = Fbod | + | | |
| RCRA 8 / Netale & Welding Durch & day 10 day | **Prior metification is required for RUSH | 1 | Count | | | , S | | j | | | | 8 | D | Inking | Wet | | Wast | te Water = W | N | | |
| Fume Sean / TOLF | tumaroumda.** | Point Count | * § | | | 20 | | | | | | 1 2 2 | <u> </u> | | 4=.= | | Other | | | | |
| Organics 26 hr. 3 day 5 Day MICROBIOLOOY LABORATORY HOURS: Weekdays: 9ara - 6pr | | 12 | 150, 44, | | | Netets Sc | | | 1 18 | 3 | 8 8 | 1 N | <u> </u> | "ABTI | BEIT | 82 app | LUMBO, MIL | cwed wipd mode only** | | | |
| Ecell O187:HT, Colfourth, S.aurms 24 hr. 2 Day | 3-5 Day | 뒿 | 4 | | | | | |]](| 8 § | | | - 1 | | | | | } | | | |
| Salmermilla, Usteria, E.esti, APO, Y A M 48 Hr3-5 Day | | | 1, 7402, ISO-Indi | OSHA | ٠ | 5 | | 1 | 3 | : 8 | Quantification Quantification | /- or Quantification , Identification, Qu BITTALS OR OTHER | - { . | | | - | | | <u> </u> | | |
| MoldRUSH24 Hr | 48 Hr3 Oay6 Day | 3 | | | | ~ ₫ | | * | | | | 9 5 8 | - | | | - 1 | | - | - | | |
| "Turneround times combitsh a imporatory priority, subject to imporatory watume and a | | 18 | ŠĚ | 7400B, | 2 | ¥ \$ | Ē | | 1 | 3 8 | \$ \$ | 8 8 3 | ١ | , | | | | 1 | - | | |
| apply for afterfeura, weakends and tielidays.** | |) E | ફ્ર કે | 8 | E I | \$ 3 | 2 | # E | 4 | 4 | 16 1 | キで置 | 1 5 | | | 2 | | } | | | |
| Spadal Instructions: | | Sol | FEM - AMERA, Level Semi-quant, Micro-vac, | - 7400A | - Total, Respirable | METAL8 - Analyto(s) RCRA8, TCLP, Welding Fume, | ORGANICS - METH | Seimonella: +/- E.coll O157:H7; | Listeria: +/- | E.cott: +/- or On | Colifornis: | Y & M. 1 Molt 4/ | <u> </u> | (L) / Area | Matrix Code | Containers | | _ | EM N | ım be r (Labo | neelo |
| | | 121 | - ē | | DUST | Z & | 3 | 3 3 | 3, | E W | 3 3 | Y & M. Molt | 1 2 | .₹ | Ž | 튕 . | Date Collected | Time Collected | L | Use Onty) | or atory |
| Cilent sample ID number (Sample ID's must be unique |) | 2 | P 8 | 2 | 8 | 層の | ð | | | | roo, | | | 3 | 3 | # | mm/dd/yy | hh/mm e/p | | | |
| 113W-080411-E | | 1 1 | 1 | | | | . | | 1 | | | 111 | 49 | | A | 8 | 4 4 | | 70 | FFOC | 100 |
| 23W-080411-W | , | \Box | \top | | | | | | П | \Box | Т | | 91 | 16 | Π | 8 | 14/1 | 1 | | | 7 |
| 3 3W-080411-N | | | 丁 | | | | | | | \top | | | | 52 | 11 | | 14/11 | 1 | | 1 | 32 37 |
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| 10 | | П | - | | | | | | 7 | | | | 7 | | 7 | 7 | | 1 | 1 | | 41 |
| | nal samples shall be listed on | attec | hed lo | one fo | mı.) | | | | | | | <u> </u> | | | | | | | - | | لــلا |
| NOTE: REI will analyse incoming semples based upon informution resisted and will not bor | seponeible for surors or omissions in c | alculati | OUR YEA | uiting f | tom tr | ne Inscou | racy o | f origins | al dete | . By al | gning a | (lent/company | represei | ntative | egrees | that su | bmission (| of the following is | amples for re | Quested | |
| gnalysts as indicated on this Chain of Custody shall ownstitute an entity! all services agreem | | o, u sių | 0 00 00 | | | | | y resul | n m a | 1.0% በ | nontnly | interest surci | wga. | | | | | | | | |
| Relinquished By: | - Fed-Ex | | | Date | e/Tim | 10: 8 | <u>5/</u> | U | | | | | | Sam | pie C | onditio | on: | On Ice | Sealed | Intact | - 1 |
| Laboratory Use Odry | | า | | `` | | | • | F | | 0 | | | | Tem | p. (F° |) | ` | Yes/No 1 | res / No | Cas/No | - } |
| | e/Time: 58% | | | | | Carrier | | _= | | | <u>~</u> | | | L | | | | | | | _ |
| Results: Contact Dead Phone Email Fax Date & | | _ | | | _ | | | Phone | | | | | Dat | | | | | me | Initia | | _ |
| Contact Pilone Email Fax Date | Time Initi | | _ | ontect | _ | | | Phone | _ | _ | ax | | Dat | e | | | Tir | те | Initia | lls. | |
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Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

| Α | = | Amosite | F = | Fiber |
|----|---|---------------|-----|---------|
| An | = | Anthophyllite | B = | Bundle |
| C | = | Chrysotile | C = | Cluster |
| Cr | = | Crocidolite | M = | Matrix |
| Т | = | Tremolite | | |

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

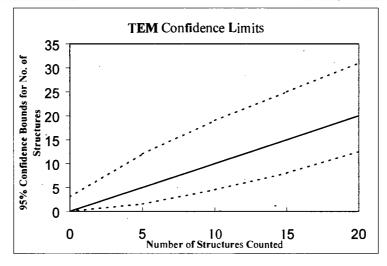
Sizing Conversion

1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

| Laboratory name: | REI |
|-----------------------------|----------------|
| Instrument | JEOL 100 N /S) |
| Voltage (KV) | 100 KV |
| Magnification | 20KX 70KX |
| Grid opening area (mm2) | 0.011 |
| Scale: 1L = | 0.28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | |
| QA Type | |

| Client : | ROR |
|---|--------|
| Sample Type (A®Air, D=Dust): Air volume (L) or dust area | 4 |
| Air volume (L) or dust area (cm2) | 956 |
| Date received by lab | 8/8/11 |
| Lab Job Number: | 218343 |
| Lab Samole Number: | 777310 |

| | |
|---|-------------|
| F-Factor Calculation (Indirect Pr | reps Only): |
| Fraction of primary filler used | · |
| Total Rasuspension Volume (mi) | |
| Volume Applied to secondary filter (ml) | |

| Analyzed by | JB |
|--------------------------------|----------------|
| Analysis date | 8/9/11 |
| Mettrod (D=Direct, I=Indirect, | 14 |
| IA=Indirect, ashed) | |
| Counting rules | 114 |
| (ISO, AHERA, ASTM) | 111 |
| Grid storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

| Grid | Grid Opening | Strncture | No. of St | ructures | Dime | nsions | Identification | Mineral Class | | | | 1 = y | es, blank | = no |
|------|--------------|-----------|-----------|----------|--------|-----------|----------------|---------------|----|-----|-----------------|--------|-----------|------|
| | | Туре | Primary | Total | Length | Width | | Amphibolé | С | NAM | Sketch/Comments | Sketch | Photo | EDS |
| A | 1-4-4 | W | | | | | | | · | | | | | |
| | K4-4 | W | | | · F |) (An) | 1. 91 | Loin h | A | 3- | 56 depri | 5 | | • |
| | 14-4 | M | | | 7 | | 15~ | A | | 1 | | | | |
| | 194-4 | M | | | | P | | 113 | ul | 8 | e lu | | | |
| B | H3-6 | W | | | | | | 17 | | 7 | , | | | |
| | 613-6 | W | | | · | | | | · | | | | | |
| _ | F3-6 | M | | | | | | | | | | | | |
| | E3-6 | W | | | | | | | | | | | | , |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

| Laboratory name: | REI |
|-----------------------------|----------------|
| Instrument | JEOL 100 N (S) |
| Voltage (KV) | 100 KV |
| Magnification | 20KX 70KX |
| Grid opening area (mm2) | 0.011 |
| Scale: 1L = | 0.28 um_ |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | |
| QA Type | |

| 12000000000 | potaro ocurr |
|------------------------------------|--------------|
| Client: | R+R |
| Sample Type (A=Air, D=Dust): | A |
| Air volume (L) or dust area (cni2) | 946 |
| Date received by lab | 8/8/11 |
| Lab Job Number: | 28343 |
| Lab Samole Number: | 777371 |
| • | |

| Analyzed by | JB_ |
|---|----------------|
| Analysis date | 8/9/11 |
| Method (D=Direct, I=Indirect, IA=Indirect, ashed) | D |
| Counting rules (ISO, AHERA, ASTM) | Alt |
| Grid storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

| F-Factor Calculation (Indirect Pr | eps Only): |
|------------------------------------|--|
| Fraction of primary filter used | |
| Total Resuspension Volume (ml) | |
| Volume Applied to secondary filter | |

| Grid | Grid Opening | Structure | No. of St | uctures | Dimer | nsions | Identification | Mineral Class | | | | 1 = yes, blank = no | | |
|------|----------------|-----------|-----------|---------|--------|--------|------------------|---------------|-----|-----|-----------------|---------------------|-------|-----|
| | O,,u Opolining | Туре | Primary | Total | Length | Width | , administration | Amphibole | С | NAM | Sketch/Comments | Sketch | Photo | EDS |
| A | L4-6 | ND | | | | | | : | | | | | | |
| | 14-6 | MO | | | V | | | | | | | | | · |
| | 14-6 | W | | | |) | 1 | | | | | | | |
| | 64-6 | NP | | | to | p/ | 4 B | ~ 50% | 0.1 | m | 3-5 | ode | bui | Λ |
| | F4-6 | NO | | | | 1 | · | A | 2 | 2 | | | | |
| 3 | 65-3 | M | | | | | | 46 | | | Jalu | | | |
| | F5-3 | W | | | | | | | | | | | · | |
| | E5-3 | W | | | | | | | | | | | | |
| | | | | | | | | | | | |]. | | |
| | | | | | | | | , | | | | | | |

| Laboratory name: | REI |
|-----------------------------|----------------|
| Instmment | JEOL 100 N (S) |
| Voltage (KV) | 100 KV |
| Magnification | 20KX TOKX |
| Grid opening area (mm2) | 0.011 |
| Scale: 1L = | 0.28 um_ |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | |
| QA Type | |

| Client : | R+R |
|-----------------------------------|--------|
| Sample Type (A=Air, D=Dust): | A |
| Air volume (L) or dust area (cm2) | 452 |
| Date received by tab | 8/8/11 |
| Lab Job Number: | 218343 |
| Lab Sample Number: | 777312 |
| • | .• |

| Analyzed by | JB |
|---|----------------|
| Analysis date Method (D=Direct, l=Indirect, | 8/9/11 |
| IA=Indirect, ashed) Counting rules (ISO, AHERA, ASTM) | Alt |
| Grid storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

| F-Factor Calculation (Indirect Pre | ps Only): |
|---|-----------|
| Fraction of primary filter used | |
| 7otal Resuspension Volume (ml) | |
| Volume Applied to secondary filter (ml) | |

| Grid | Grid Opening | Structure | No. of Structures | | No. of Structures | | No. of Structures | | tures Dimensions | | No. of Structures Dimen: | | Identification Mineral Class | | | | | 1 = yes, blank = no | | |
|------|--------------|-----------|-------------------|----------|-------------------|-------|-------------------|-----------|------------------|------|--------------------------|--------|------------------------------|-----|--|--|--|---------------------|--|--|
| • | | Туре | Primary | Total | Length | Width | | Amphibole | С | NAM | Sketch/Comments | Sketch | Photo | EDS | | | | | | |
| A | H5-4 | ND | | | | | | | | | , | | | | | | | | | |
| | 45-4 | NO | | <u>.</u> | | Pcei | A | 85% is | tac | | 5-7% de | en's | | | | | | | | |
| | F5-4 | ND | | | | Pres | B~ | A | | | | | | | | | | | | |
| · | E5-4 | ND | | | | 7 | | 1Bm | | 1/2/ | | | | | | | | | | |
| B | K4-4 | NO | | | | | | 1 | | 17 | | | | | | | | | | |
| | 14-4 | ND | a sinia | | | | | · · | | | | | | | | | | | | |
| | 64-4 | ND | | | | | | | | | | | | | | | | | | |
| | FU-4 | M | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | , | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |

| Laboratory name: | REI |
|-----------------------------|----------------|
| Instrument | JEOL 100 N /S) |
| Voltage (KV) | 100 KV |
| Magnification | 20KX 70KX |
| Grid opening area (mm2) | 0.011 |
| Scale: 1L ≈ | 0.28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | |
| QA Type | |

| Client : | R+R |
|-----------------------------------|--------|
| Sample Type (A=Alr, D=Dust): | A |
| Air volume (L) or dust area (cm2) | 944 |
| Data received by lab | 8/8/0 |
| Lab Job Number: | 218343 |
| Lab Sample Number: | 777373 |

| Analyzed by | JB |
|-------------------------------|----------------|
| Analysis date | 8/9/11 |
| Method (D=Dlrect, l=Indirect, | |
| IA≕indirect, ashed) | |
| Counting rules | A IL |
| (ISO, AHERA, ASTM) | / +17 |
| Grkl storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

| F-Factor Calculation (Indirect Pre | eps Only): |
|--|------------|
| F-Factor Calculation (Indirect Preps Only): Fraction of primary filter used Total Resuspension Volume (ml) Volume Applied to secondary filter | , |
| Total Resuspension Volume (ml) | |
| Volume Applied to secondary filter (ml) | |

| Grld | Grkl Opening | Structure | No. of St | ructures | Dime | nsions | Identification | Mineral Class | | neral Class | | 1 = yes, blank = no | | |
|------|--------------|-----------|-----------|----------|--------|--------|----------------|---------------|-----|-------------|-----------------|---------------------|-------|----------|
| | | Туре | Primary | Total | Length | Width | | Amphlixoie | С | NAM | Sketch/Comments | Sketch | Photo | EDS |
| A | G4-4 | NP | | | | | | | | | | | | |
| | FUN | NO_ | | | 1 | wp | 1 | 70 % inta | f | 3- | 5% deb. | , 5 | | |
| | EYM | NO | | | P | 20 | 3 90 | o/ointa | nt. | 3-5 | 1. deba | 4 | | |
| | 44 | ND | | | | | | / | | 2 | | | | |
| B | H4-6 | NO | | | | | | 43 | | sl | 2/11 | | | |
| | 64-6 | 2 | | | | | | // | | 7 | 7 | | | · |
| | F46 | NO | | · | | | | | | | | | | |
| | E46 | NA | | | | | | | | | | | | |
| | | | | Ì | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | Rev 3-20 |

| Laboratory name: | REI |
|-----------------------------|----------------|
| Instrument | JEOL 100 N /S) |
| Voltage (KV) | 100 KV |
| Magnification | 20KX 10KX |
| Grid opening area (mm2) | 0.011 |
| Scale: 1L = | 0.28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | · |
| QA Type | |

| Client : | RAR |
|-----------------------------------|--------|
| Sample Type (A=Air, D=Dust): | A |
| Air volume (L) or dust area (cm2) | 988 |
| Date received by lab | 8/8/11 |
| Lab Job Number: | 218343 |
| Lab Sample Number: | 777314 |

| Analyzed by | JB |
|---|----------------|
| Analysis date | 8/9/11 |
| Method (D=Direct, i=Indirect, tA=Indirect, ashed) | D |
| Counting rules (ISO, AHERA, ASTM) | Alf |
| Grid storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

| F-Factor Calculation (Indirect Preps Only): | | | | | |
|---|---|--|--|--|--|
| Fraction of primary fitter used | | | | | |
| Total Resuspension Volume (mi) | | | | | |
| Volume Applied to secondary filter (ml). | , | | | | |

| Grid | Grid Opening | Structure | Time | | tructures Dimensions | | Identification | Mineral Class | | | | 1 = y | es, blank | ≃ no |
|------|--------------|-----------|---------|-------|----------------------|-------|----------------|---------------|-----|---------------|-----------------|--------------|-----------|------|
| | , | Туре | Primary | Total | Length | Width | | Amphibole | С | NAM | Sketch/Comments | Sketch | Photo | EDS |
| A | K5-1 | M | | | | | | | | | | | 1 | · |
| | H5-1 | ND | | | (F | mp_ | A 5 | 20 Linto | nf | 3- | 5% deb | Y.5 | | |
| | G15-4 | NP | | | Po | 10C | b 9 | O'sinta | nf | 7- | 5 / Alber | ٠ς | | |
| | 615-1 | M | | | | / · | | | 6 | | | | | |
| B | H3-6 | W | | | | | | | Sun | \mathscr{I} | 8/4/11 | | | |
| | G3-6 | NO | | | | | | | | | | | | |
| | F3-6 | MO | | | | | | | | | | | | |
| | E3-6 | NO | | | | | | | | | · | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

| Laboratory name: | REI |
|-----------------------------|----------------|
| Instrument | JEOL too N (S) |
| Voltage (KV) | 100 KV |
| Magnification | 20KX TOKX |
| Grid opening area (mm2) | 0.011 |
| Scale: IL≃ | 0.28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | |
| QA Type | |

| Client: | RAR |
|-----------------------------------|--------|
| Sample Typa (A=Air, D=Dust): | A |
| Air volume (L) or dust araa (cm2) | 960 |
| Date received by lab | 8/8/11 |
| Lab Job Number: | 218343 |
| Lab Sampia Number: | 777315 |

| Analyzed by | JB |
|---|----------------|
| Analysis dale | 8/9/11 |
| Method (D=Direct, l=Indirect, IA=Indirect, ashed) | P |
| Counting rules (ISO, AHERA, ASTM) | Alt |
| Grid storage location | Month Analyzed |
| Scope Alkinment | Date Analyzed |

| F-Factor Calculation (Indirect Pr | eps Only): |
|---|------------|
| Fraction of primary filter used | |
| Total Resuspension Volume (ml) | |
| Volume Applied to secondary filter (ml) | |

| Grid G | Grid Opening | Structure | No. of Structures | | Dimensions | | identification | Mineral Class | | | | 1 = yes, blank = no | | |
|--------------|--------------|-----------|-------------------|-------|------------|-------|----------------|---------------|------|-----|-----------------|---------------------|-------|-----|
| | | Туре | Primary | Total | Length | Width | | Amphibole | С | NAM | Sketch/Comments | Sketch | Photo | EDS |
| A | 615-4 | . MS | | | | | | | | | | | | |
| | F5-4 | W | | | 4 | | 4 | 60% in | fond | 1 | -5% deb | ۸. ۶ | · | |
| -,- | E5-4 | MS | | | 7 | ms | 3 | 90 % in | Lus | + 3 | 5% del | 2W5 | | |
| | C5-4 | MD | | | | - 0 | | | 6 | 1 | | | | |
| B | 44-6 | M | | | | | | 4/1 | ne 1 | \$ | /2/11 | , | | |
| <u>.</u> | 64-6 | ND | | | | | | | | | 1 | | | |
| | F4-6 | MΔ | | | | | | | | | | | | : |
| | E4-6 | W | | | | | | | | · | | | | · |
| · | | | | | | | | | | | | | | |
| | · | | | | | | | | | | | | | |

| Laboratory name: | REI |
|-----------------------------|----------------|
| Instrument | JEOL 100 N (S) |
| Voltage (KV) | 100 KV |
| Magnification | 20KX 30KX |
| Grid opening area (mm2) | 0.011 |
| Scale: 1L= | 0.28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | |
| QA Tyoe | <u> </u> |

| | 1.0.0.0 |
|-----------------------------------|---------|
| Client: | ROR |
| Sample Type (A=Air, D=Dust): | A |
| Air volume (L) or dust area (cm2) | 958 |
| Date received by lab | 8/8/u |
| Lab Job Number: | 218343 |
| Lab Sample Numbèr: | 777310 |
| • | |

| Analyzed by | JB |
|---|----------------|
| Analysis date | 8/9/11 |
| Method (D=Oirect, I=Indirect, IA=Indirect, ashed) | |
| Counting rules (ISO, AHERA, ASTM) | Alt |
| Grid storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

| F-Factor Calculation (Indirect Pr | eps Uniy): |
|---|------------|
| Fraction of primary filter used | |
| Total Resuspension Volume (mi) | |
| Volume Applied to secondary filter (ml) | |

| Grid | Grid Opening | Structure | No. of St | ructures | Dime | nsions | identification | Mineral Class | | | | 1 = y | es, blank | = no |
|------|--------------|-----------------|-----------|----------|--------|--------|----------------|---------------|------|-----|-----------------|--------|-----------|------|
| | | Туре | Primary | Total | Length | Width | | Amphibole | С | NAM | Sketch/Comments | Sketch | Photo | EDS |
| A | 614-4 | $\Delta \Omega$ | | | | _ | | | | | - | | | |
| | Fyzy | NO | | · | | Par | A | 80%. | nkn | t | 3-5/1 | ebne | 7 | |
| | E4-4 | M | | | | Par | 03 | 80%. | n du | a f | 3-5% | bri | 5 | |
| | 644 | M | | | | | | | 6 | 1 | | | | |
| 13 | H4-3 | W) | | | | | | 11 | | 1 2 | da lu | | | |
| | 64-3 | M | | | | | | 1 | | | / | | | |
| | F4-3 | M | | | | | | | | | | | | |
| | £4-3 | M | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration, $s/cc = \frac{\# \text{ Asbestos Structures}}{\# \text{ GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{1L}{1000cc}$

Filter loading, $s/mm^2 = \frac{\# \text{ Asbestos structures}}{\text{Area Analyzed (mm}^2)}$

GO = TEM grid opening



August 17, 2011

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 218701-1 None Given

Project Description:

Pacificorp 3rd West Sub-

Station Backgrounds

Eldon Romney R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 218701-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 218701-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description:

Pacificorp 3rd West Sub-Station Backgrounds

Date Samples Received:

August 12, 2011

Analysis Type:

TEM, AHERA

Turnaround:

3-5 Day

Date Samples Analyzed:

August 16, 2011 - August 17, 2011

| Client ID Number | Lab ID No | umber | Area Analyzed | Air Volume Sampled | Number of Asbestos Structures | Analytical Sensitivity | Asbestos Concentration | Filter Loading |
|---------------------|--------------|----------------|------------------|--------------------------|-------------------------------------|---------------------------|---------------------------|-------------------|
| | | | | oupiou | Detected | | | |
| | | | (mm²) | (L) | | (s/cc) | (s/cc) | (s/mm²) |
| 3W080811-N | EM | 780495 | 0.0770 | 1020 | ND | 0.0049 | BAS | BAS |
| 3W080811-E | EM | 780496 | 0.0770 | 1024 | ND | 0.0049 | BAS | BAS |
| 3W080811-W | EM | 780497 | 0.0770 | 1020 | ND | 0.0049 | BAS | BAS |
| 3W080911-S | EM | 780498 | 0.0990 | 844 | ND | 0.0046 | BAS | BAS |
| 3W080911-W | EM | 780499 | 0.0990 | 844 | ND | 0.0046 | BAS | BAS |
| 3W080911-N | EM | 780500 | 0.0990 | 842 | ND | 0.0046 | BAS | BAS |
| 3W080911-E | EM | 78050 1 | 0.0990 | 846 | ND | 0.0046 | BAS | BAS |
| 3W081011-N | EM | 780502 | 0.0880 | 912 | ND | 0.0048 | BAS | BAS |
| 3W081011-E | EM | 78050 3 | 0.0880 | 912 | ND | 0.0048 | BAS | BAS |
| 3W081011-S | EM | 780504 | 0.0880 | 914 | ND | 0.0048 | BAS | BAS |
| 3W081011-W | EM | 780505 | 0.0880 | 914 | ND | 0.0048 | BAS | BAS |

NA = Not Analyzed

ND = None Detected

BAS = Below Analytical Sensitivity

Average Grid Opening in mm² = 0.011

Filter Material = Mixed Cellulose Ester

Filter Diameter = 25 mm

Effective Filter Area = 385 sq mm

DATA QA

Due Date: 8/17 - 8/19
Due Time: 8:45a



RES 218701

| Page | 1 | of | 2 | |
|------|---|----|---|--|

| | INVOICE TO: (IF | DIFF | ERE | NT) | | | | | | | | C | ONTAC | T IN | FOR | MATIO | N: | | | |
|--|--|------------------------|-------------------------|----------|-----------------|---|-----------------|----------------------|--------------------|-----------------|-----------------------|----------------|------------------------|-------------|--------------|-----------------|------------------|-----------------|--------------------|-------------|
| Company: K.F.K. Euripeumintal | Company. | | | | | Cont | et [| ave | Re | ske | lle | y | | | Conte | id: Ju | still K | 009 | 3 | |
| Address: 41 W 9000 S | Address: | | | | | Phon | * 8 | ા | Bi | 54 | IIi | 035 | | | Phon | : 3OI | 828- | 55 | 9 | |
| Sandy Ut. 84070 | | | | | | Fax | | | | | | | | | Fex: | | | | | |
| | <u> </u> | | | | | Celly | | | | | | | | | BOAL | eger: | | | | |
| Projeci Number and/m P.D. &: | | | | | | 1 | | | de Emal | | | | | | ٠. | ^ - | | | | |
| Project Description/Location: Vocal House 3 West Sub-5 | ethon Backgrown | <u>de</u> | | | | | Jay | 2 | Er. | rev | W/V | <u>مرين. ٥</u> | مرد د) | (L) | W 1 | e ry | enviro. | رمين | <u> </u> | |
| ASBESTOS LABORATORY HOURS: Weekdays: 7am - Tpm | | | | | R | EQUE | STEL |) AN | ALYS | 318 | | | T | VA | D N | IATRIX | CODES | | LAB NO | TES: |
| PLM / PCM / TEM RUSH (Same Day) PRIONITY (Next Day | STANDARD | Γ | | П | | | Т | TT | TT | Τ | П | TT | | Air= | A | | Bulk = B | | | |
| (Rush PCM = ahr, TEM = ehr.) | |] [| | | 1 | - | į | 11 | 11 | | | 11 | | Dust: | = D | | Paint = P | | | |
| CHEMISTRY LABORATORY HOURS: Weakdays: Bam - 8pm | · | 1 | | 1 1 | ļ | 1 | - 1 | 11 | | | ١ ١ | | | Soil 1 | | | Wipe = W | _ | | |
| Metal(s) / Dust RUSH 24 hr 3-8 Day | **Prior nodflostion le | | 녍 | 1 1 | | | - [| | - | | | | _ | aab s | | | F = Food | | | |
| RCRA 8 / Metale & WeldingRUSH 5 day10 day | regideed for RUSH | 팋 | 8 _ | 1 1 | | E S | - 1 | 11 | 損 | | | 5 | Drinki | ia Wa | | | ste Water = | w | | |
| Organica 24 hr 3 day 8 Day | tumarounds.** | Point Co. | ≯ p | 1 1 | | 42 | Į. | | 1 | | | 1 E | - | T4 F | | o Othe | | | | |
| MICROBIOLOGY LABORATORY HOURS: Weskdayer Sam - 6pt | | [2] | S Å | 1 1 | - 1 | *Setak | ł | | ð | S | 8 | EX | A3 | | 7928 | pprovad v | vipe meda o | nly" | | |
| Ecell 0167:H7, Cellfenne, Saureue24 hr2 Day | 3-6 Day | 1 1 | ~ 칕 | < | | | 1 | 1 1 | 8 | | 8 8 | 2 E | 1 | 1 | 1 1 | | } | ł | | |
| Sahnonella, Liateria, E cell, APC, Y & M48 Hr3-5 Day | | 8 | 25 A | OSHA | 2 | 2 | | | 7 | 1 | | 1 S | 1 | | | | | ł | | |
| | 48 Hr 3 Day 5 Day | E G | 를 다 | | 製 | ~ § | - 1 | | 발 | 0 | 0 0 | \$ 80 \$ | 1 | 1 | | | | ŧ | | |
| "Turneround times seesbijely a laboratory priority, subject to laboratory volume and a | | 181 | Š Ž | 74008 | 2 | ₹ ¥ | 丰富 | 4 | [8] | 5 ‡ | 1 9 | 5 -1 | | | 1 | | 1 | - 1 | | |
| apply for affectiours, weakends and holidays.** | • | Ē | ફું ફું | 3 | त्रं | 351 | | 1 | | . 1 1 | F 4 | | Volume | ١. | 2 | | Į | - 1 | | |
| Special inetracoons: | ····· | i i | - AMERA, quent, Nico | \$0\$ | Total | ۱۹, | 8 8 | coll O157;H7: | robic Plete Count. | fforms. | 2 3 | + 9 | ۾ چُ | 18 | 1.5 | | j | | EM Number | (Latoratery |
| | | 1 1 | · 6 | | = | WETALS - Analyte(8) RCRA 8, TCLP, Welding Furne, | Salmonella: +/- | 8 4 | 1 | | S.Burer | 3 2 | Sample (L) / Are | Matrix Code | # Containers | Date Collect | | ne j | Use Or | |
| Cilent aample ID number (Sample ID's must be unique |) | 2 | | 夏 | PGST | 말 | 5 | | /CROE | MO1.0 | | 3 | Sample V (L) / Area | 2 | 2 | mm/dd/ | | | | |
| 1 3W0808U-N | | | X | | | | | | П | | | TT | 102 | A | | 8091 | Įſ | | 78000 | S |
| 2 3W 080811-E | | | Τ | П | \neg | $\neg \neg$ | | \prod | \prod | | | | 1.02 | шТ | | T | | | C | 16 |
| 3 3W 0808 (1-W | | | T | | | | | | \prod | \top | | | 1,02 | 3 | \sqcap | T | | | . (| 29 |
| 4 3W 080911-5 | | \prod | 1 | | \top | | 1 | П | \prod | | | | 84 | _ | П | शिष्टी | /1 | | (| 18 |
| 5 3W D80911- W | | | T | | | | \neg | П | TT | | | | 84 | il I | | 1 | | | | 99 |
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| 10 3W 08/0 U -S | | | | | \neg | | | | 11 | | \top | | 914 | | 17 | 1 | | | | 04 |
| | nal samples shall be listed on | altaci | ed lo | ng lon | m.) | | | | سلس | | | 11 | لند | | لبا | | | | | |
| NOTE: REI will easily a incaming samples the dupon information monked and will rink be analysis as indicated on the Chalo of Callody shall constitute an analytical segricial agreem | esponsible for errors or omissions in a ent with revinent terms of NET 30 day | alcutatio s. failum | ons nest | of gnith | om the houve | ruspent e | sty of Cu | riginei e mauti i | lata. By | signir 6 mon | ig clien thiv into | t/company re | presenteti oe. | и эдп | es tha | t eubmissio | in of the follow | ving sam | ples for requested | |
| | (0) 6 | | | | | | | | | | | | | | | | | | | |
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| Laboratory Use Only/ Received By: Da | te(Time: 8/12/11) | <u>8.4</u> | 5= | L | C | amer. | Le. | di | | | | | Tę | mp. (| P") _ | | Yes / No | Ye | 8 / No Yes | / No |
| Results: Contact / Phone Email Fex Date | 517 Time JUD Initi | | | | | | | one | Email | Fax | | | Date | | | | Time | | Initials | |
| Contact Phone Email Fax Date | Time I Initi | ale i | lc. | ata at | | | O++ | | Email | Eav | | | Data | | | _ | Time | | Initiale | 1 |

| Due Date: Due Time: | RESEIVUIII 3801 Logen St. Denver, C Pegor : 303-90 INVOICE TO: (IF | 9-209 | g | | 9 64-1 | Ĩ I − 4. 986 • F¢ | ⊅ # x 303 | 7 // 3-477- | -4279 | · To | l Fre | e:866 | a | J, | | | | | MATION: | Job # Page | 21870 <u>1</u> *2 o 2_ |
|--|---|---------------|------------------------|--------------|---------------------|-------------------------------------|---------------------|-----------------------|----------------------------------|----------------------|--------------|-------------------|-------------------|--------|---|-----------------------------|-------------|---------------|-------------------|-------------------|------------------------------------|
| Company: | Company: | | | | | Co | LLCC | | | | | | | | | | | Conta | | | |
| /skt/rees: | Address: | | | | | | me: | • | | | | | | | | | | Phon | 8: | | |
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| ASBESTOS LABORATORY HOURS: Weekdays: 7am - Tpm | | 1 | | | F | REQU | EST | ED | AN | ALY | '8 18 | 1 | | | _ | | VAL | JD N | ATRIX CO | DES | LAB NOTES: |
| PLM / PCM / TEM RUSH (Same Day) PRIORITY (Next De |)_STANDARD | † | Γ | T | | | Ī | ĪĪ | T | T | | Т | | | | | Air = | _ | | uik = B | |
| (Rush PCM n 2hr, TEM = 5hr.) | | 1 | | | | ì | 1 | | | | | | | | | | ust ' | D | P | aint = P | |
| CHEMISTRY LABORATORY HOURS: Weekdays: Sam - Spm | | 1 | | | | | | | | | | | | | | | 3oil = | S | W | ipe = W | |
| Metal(e) / Duat RUSH 24 hr3-5 Day | | 1 | * | 1 | | | İ | 11 | | | | | | | | | ab = | | | • Food | • |
| RCRA 8 / Mstals & Welding RUSH 6 day 10 day | [⇔] Prior notifiestien is regubed for RUSH | E | Quent, | 1 | | S | | | | μg | | | | 8 | | Drinkin | a Wa | er 😑 | DW Waste | Weter = WW | |
| I alle ceally ICE | lumerounije.** | Point Count | 1 S | 1 | | Scen | İ | 11 | - | Quentification | 1 | | 1 1 | NOTES | | | | | = Other | | |
| Organice24 hr 3 day5 Day | | ş | ISO, ++, | ' | | Metals | | | - | 9 | | 5 5 | H | | | "AS | MEI | 79 2 8 | ppravad wipe | media only** | |
| MICROBIOLOGY LABORATORY HOURS: Weekdays: Sam - Spr | | | 五萬 | 1 | | | İ | 11 | | | 5 | or Quantification | | 8 6 | i | | | | | | |
| e.eoil O157:H7, Coliferms, Saureus24 hr2 Dey | | 1 8 | 7402, ISO-Indi | OSHA | | ١ | | | | 1 | 3 | | 텔 | Mon T | | | | Ιİ | | • | |
| Salmonella, Listeria, E cell, APC, Y & M 48 Hr3-5 Day | | Long report, | - | 8 | 8 | | | | | 1 | | 3 3 | Uantification | 3 8 | ; | | Ì | | | | |
| MoldRUSH24 Hr | 48 Hr3 Day5 Day | | Level II, ro-vac, K | 74008, | 8 | (S) (B) | | 1 1 | * | O. | | 5 5 | ð | E S | | | | | | | |
| **Turnsround tinws establish a laboratory priority, subject to laboratory volume and a apply for efferhours, weekends and boildays.** | ro not guaranteed. Additional foca | Short report, | 2 8 | 1 | - Totel, Respirable | - Analyte(s) TCLP, Welding Fume, | ĮĘ | ‡ | 1 | 8 | 8 | * * | 5 | Ĕ | | 92 | | | | | |
| | | Įŧ | AHERA, sant, Mio | 8 | 夏 | ₹₫ | 2 | 뜋 | <u> </u> | Ğ. | ‡ | ğ 3 | * | * g | | 평 _ | 용 | 5 | | } | |
| Special Instructione: | | 1 | · 5 | PCM - 7400A, | DUST | METALS RCRA 8, | ORGANICS - METH | Salmonella | E.coli 0157:H7: Listeria: +/- | Aerobic Plate Count. | Essi | S.aureus: | Y 8.14 | Moto | | Sample Volume (L) / Area | Matrix Code | # Containers | Date Collected | Time Collected | EM Number (Leboratory Use Only) |
| Client sample ID number (Sample ID's must be unique | <u>) </u> | 3 | | 2 | 8 | 3 % | ō | ļ., | M | CRO | BIO | LOa | <u>r</u> | | | | | # | m/n/sid/yy | hh/rtm e/p | :4- P.P |
| 1 3W 081011 - W | | | X | | | | L | | | | | ١. | Ш | | | 914 | K | | 8/10/11 | | 780505 |
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| 5 | | 1 | | T | | | | | + | П | + | \top | \sqcap | \top | | | | П | | | |
| 6 | | \vdash | | П | \neg | , | _ | | + | T | \dashv | 1 | Ħ | _ | | | | | - | | |
| 7 | | | | | | | _ | | + | \Box | 1 | + | $\dagger \dagger$ | \top | | | 1 | | | | |
| 8 | | | | | \dashv | | | | \top | 11 | + | +- | П | 1 | | | T | | | | |
| 9 | · · · · · · · · · · · · · · · · · · · | | | | | | | \sqcap | - | | + | T | П | \top | | | | \Box | ~ | | |
| 10 | · · · · · · · · · · · · · · · · · · · | | | | | | | | \dagger | 11 | \top | 1 | П | 1 | | | | | | | |
| the state of the s | nal samplea shall be listed on | atta | ched lo | ng fo | m.) | | لممسا | | | | | | | | | | | | | · | |

| Number of 8 | samples received: | | (Additional sai | nplea sha | s be listed on attache | d long form | n.) | | | |
|------------------------|------------------------------|--|-------------------------|------------|-------------------------------|----------------|--|------------------|-------------------------|---------------------------|
| | | | | | | | m the ineccuracy of original data. By signing disintloon | | bmlesion Of the followi | ing gemples for requested |
| eneiyele e | e indicated on this Chain of | Custody shall coostitute an analytical | services egreement with | syment ten | res of NET 30 days, failure t | to comply with | payment terms may result in a 1.5% monthly interest | surcharge. | | |
| Relinquis | shed By: | | | | | Date/ | Time: | Sample Condition | on: On Ice | SealedIntact |
| Laborato Received B | ry Use Only y: | ls. | Date/Firme | . 8 | 8/12/11 8: | 45 9 | carrier: Fed 0X | Temp. (F°) | Yes / No | Yes / No Yes / No |
| Results: | Contact | Phone Emeil Fax | Date | Time | Initials | Contect | Phone Email Fax | Date | Time | Initiels |
| <u> </u> | Contact | Phone Email Fax | Date | Time | initials | Contact | Phone Emell Fax | Date | Time | Initiais |

Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

| A = | = | Amosite | F | = | Fiber |
|------------|---|---------------|---|---|---------|
| An = | = | Anthophyllite | В | = | Bundle |
| C = | = | Chrysotile | C | = | Cluster |
| Cr = | = | Crocidolite | Μ | = | Matrix |
| Т = | = | Tremolite | | | |

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

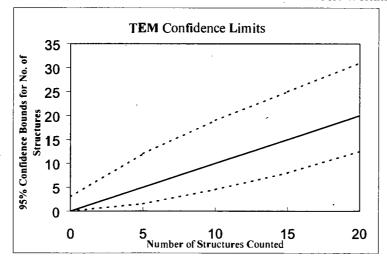
Sizing Conversion

1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

| Laboratory name: | REI |
|-----------------------------|--------------|
| instrument | JEOL 100(N)S |
| Voltage (KV) | 100 KV |
| Magnification | ZOKX OKX |
| Grid opening area (mm2) | 0,011 |
| Scale: 1L = | 0,28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | |
| QA Type | |

| Client: | Kork |
|-----------------------------------|---------|
| Sample Type (A=Air, D=Dusi): | A |
| Air volume (L) or dust area (cm2) | 1020 |
| Date received by lab | 8/12/11 |
| Lab Job Number: | 218701 |
| Lab Sample Number: | 780 495 |
| | |

| Analyzed by | 14/51 |
|---|----------------|
| Analysis date | 8/16/11 |
| Method (D=Oirect, I=Indirect, IA=Indirect, ashed) | D |
| Counting rules (ISO, AHERA, ASTM) | Att |
| Grid storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

| F-Factor Calculation (indirect Pr | eps Only): |
|---|------------|
| Fraction of primary filter used * | |
| Total Resuspension Volume (mi) | |
| Volume Applied to secondary filter (ml) | |

| Grid G | Grid Opening | Structure | No. of St | mctures | Dime | nsions | Identification | Mineral (| Class | | | | 1 = y | es, blank | = no |
|--------|--------------|-----------|------------|---------|--------|--------|----------------|-----------|-------|----|------|-----------------|--------|-----------|------------|
| | | Туре | Primary | Total | Length | Width | | Amphil | oole | ٥_ | NAM | Sketch/Comments | Sketch | Photo | EOS |
| A | C3-6 | ND | | | | | | | | | | | | | |
| | E3-6 | MD | | | | | | | | | | | | | |
| | 23-4 | ND | | | | | | | | | | | | | |
| | C5-1 | M | | | | · | | | | | | | | | |
| | E5-1 | NO | | | | | (| | | | | | | | |
| B | C5-4 | M | | | | | | | | | | | | | |
| | 95-3 | ND | | | | | · | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | Pons A | 70%. | n der | 1 | 3-50 | 6 dibns | | | 11 |
| | | | (Property) | | | | B | 70 0/ | , | | 3-50 | ho debnis | - | | f i |
| | | | , | | | | | · | | | | | | | Rev 3-2009 |

| Laboratory name: | REI |
|------------------------------|--------------|
| Instmment | JEOL 100 N S |
| Voltane (KV) | 100 KV |
| Magnificati0n | 2010(XOKX |
| Grid opening area (mm2) | 0.011 |
| Scale: IL = | 0.28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mn.2) | |
| QA Twee | |

| Client : | Roll |
|-----------------------------------|---------|
| Sample Type (A=Air, D=Oust): | A |
| Air volume (L) or dust area (cm2) | 1024 |
| Date received by lab | 8/12/11 |
| Lab Job Number: | 218701 |
| Lab Sample Number. | 780496 |

| Analyzed by | 11/50 |
|---|----------------|
| Analysis date | 8/16/11 |
| Method (D=Direct, I=Indirect, IA=Indirect, ashed) | D |
| Counting rules (ISO, AHERA, ASTM) | AH |
| Grid storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

| F-Factor Calculation (Indirect Pr | eps Only): | • |
|--|------------|---|
| Volume Applied to secondary filter | | |
| Total Resuspension Volume (ml) | | |
| Volume Applied to secondary filter (ini) | | |

| Grid | Grid Opening | Structure | No. of Structures | | Dimer | nsions | Identification | Mineral Class | | | | 1 = ves, blank = no | | |
|------|--------------|-----------|-------------------|-------|--------|--------|----------------|---------------|---|------|-----------------|---------------------|-------|--------|
| | | Туре | Primary | Total | Length | Width | | Amphibole | С | NAM | Sketch/Comments | Sketch | Photo | EOS |
| A | C4-3 | M | | | | | · | | | | | | | |
| | E4-3 | N) | | | | | | | | | | · . | | |
| | F4-3 | NO | | | | · · | • : | | | | | | | |
| | F4-1 | ND | | | | | | | | | | · | | |
| B | 95-4 | M | | | | | , | | | | | | | |
| | H4-1 | MD | | | | | | | | | | | | |
| | K3-3 | N | | | | | | · | | | | | | |
| | : | | | | | | | | | | · | | | ÷ : |
| | | | . 7.7 | | | | Page A | 60% in ha | | 3-50 | o dibns | Joe | 1 | na |
| | | | | | | | B | 70% int | 1 | 35 | ho Jehnis | | | 0.0000 |

| Laboratory name: | REI |
|-----------------------------|--------------|
| Instrument | JEOL 100 N S |
| Voltage (KV) | 100 KV |
| Magnification | ZOKX OKX |
| Grid opening area (mm2) | 0.011 |
| Scale: 1L= | 0.28 um |
| Scale: ID = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | |
| QA Tyoe | |

| Client ; | Roll |
|-----------------------------------|---------|
| Sample Type (A=Air, D=Dust): | A |
| Air volume (L) or dust area (cm2) | 1020 |
| Date received by lab | 8/12/11 |
| Lab Job Number: | 218701 |
| Lab Sample Number | 780 497 |

| Analyzed by | 16/51 |
|---|----------------|
| Analysis date | 8/16/11 |
| Method (D=Direct, I=Indirect, IA=Indirect, ashed) | D |
| Counting rules (ISO, AHERA, ASTM) | AH |
| Grid storage locatton | Month Analyzed |
| Scope Alignment | Date Analyzed |

| F-Factor Calculation (Indirect Pr | eps Only): |
|---|------------|
| Fraction of primary filter used | |
| Total Resuspension Volume (ml) | |
| Volume Applied to secondary filter (ml) | |

| Grid Opening | Structure | Structure | No. of St | ructures | Dime | nsions | Identification | Mineral Class | · . | | | 1 = y | es, blank | = no |
|--------------|--|--|---|-----------------------------|---|--|--|---|---|--|--|----------------|---|------|
| | Туре | Primaiy | Total | Length | Width | ido i andago i | Amphibole | С | NAM | Sketch/Comments | Sketch | Photo | EDS | |
| K5-4 | ND | | | | | | | | | | | | | |
| H5-4 | ND | | | | · | | : | | | | | | | |
| 95-4 | M | | | | | | | | | | | | | |
| F5-4 | ND | | | | | | | | | | | | | |
| K3-3 | M) | | | | | , | | | | | | | | |
| H3-3 | MD | | | | | | | | | | | | | |
| 43-3 | NO | | | | | | · | | | | | | | |
| | | | | 7. | | | | | | | | | | |
| · | | | | | | Pan A | 70% in her | F 3 | -5 . | Lo debus | 10 | M | em | |
| | | | | | | R | 80 % ut | 13 | -5 | ho debris | 1 | -/- | | |
| | K5-4 H5-4 G5-4 F5-4 K3-3 H3-3 | Type K5-4 ND H5-4 ND F5-4 ND K3-3 ND H3-3 ND | Grid Opening Structure Type No. of St Primary K5-4 ND H5-4 ND G5-4 ND F5-4 ND K3-3 ND H3-3 ND | Grid Opening Structure Type | Grid Opening Structure Type No. of Structures Dime Primary Total Length | $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ | Grid Opening Structure Type No. of Structures Dimensions Identification Primary Total Length Width K5-4 NO GS-4 NO GS-4 NO GS-4 NO GS-4 NO GS-3 NO GS | Grid Opening Structure Type No. of Structures Dimensions Identification Mineral Class Primary Total Length Width Amphibole K5-4 ND GS-4 ND FS-4 ND H3-3 ND G13-3 ND G13-3 ND FRO 0/ 1 | Grid Opening Structure Type Primary Total Length Width Identification Amphibole C K5-4 ND H5-4 ND GS-4 ND F5-4 ND F3-3 ND G3-3 ND G3-3 ND G3-3 ND F5-0 / 1 3 RFO 0/ 1 3 | Grid Opening Structure Type Primary Total Length Width Identification Amphibole C NAM K5-4 ND GS-4 ND FS-4 ND F3-3 ND G3-3 ND G3-3 ND G3-3 ND G3-3 ND G3-5 RFO V/ 1 3-5 | Structure Type No. of Structures Dimensions Identification Mineral Class Amphibole C NAM Sketch/Comments | Structure Type | Grid Opening Structure Type No. of Structures Primary Total Length Width Mentification Amphibole C NAM Sketch/Comments Sketch Photo K5-4 ND GS-4 ND F5-4 ND G3-3 ND G3-3 ND G3-3 ND F2-4 ND G3-3 ND F3-5 % dubns F3-7 % labeled | |

| Laboratory name: | REI |
|------------------------------|--------------|
| | |
| instrument | JEOL 100 N S |
| Voltage (KV) | 100 KV |
| Magnification | ZOIOCHOIX |
| Grid opening area | |
| (mn ₁ 2) | 0.011 |
| Scale: 1L = | 0.28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area | -08 |
| (mm2) | 385 |
| Secondary Filter Area (rhm2) | |
| QA Type | |

| Cilent: | Roll |
|-----------------------------------|---------|
| Sample Type (A=Air, D=Dust): | A |
| Air volume (L) or dust area (cm2) | 844 |
| Date received by lab | 8/12/11 |
| Lab Job Number: | 218701 |
| Lab Sample Number: | 750498 |

| Analyzed by | JB | | | | |
|---|----------------|--|--|--|--|
| Analysis date | 8/16/4 | | | | |
| Method (D=Direct, l=Indirect, IA=Indirect, ashed) | D' | | | | |
| Counting rules (ISO, AHERA, ASTM) | AH | | | | |
| Grid storage location | Month Analyzed | | | | |
| Scope Alignment | Date Analyzed | | | | |

| F-Factor Calculation (Indirect Pr | eps Only): | |
|---|------------|-------------|
| Frection of primary filter used | <u> </u> | |
| Total Resuspension Volume (mi) | | |
| Volume Applied to secondary filter (mf) | | |

| Grid | Grid Opening | Structure | No. of St | ructures | Dime | nsions | identification | Mineral Class | | | | 1 = y | es, blank | = no |
|------|--------------|-----------|-----------|----------|--------|--------|----------------|---------------|-------|------|-----------------|--------|-----------|------|
| | | Туре | Primary | Total | Length | Width | | Amphibole | С | NAM | Sketch/Comments | Sketch | Photo | EDS |
| A | 44-6 | W) | | | | | | N. Committee | | | | | | |
| | 64-6 | M) | | | | | | | | | | | | |
| | F4-60 | W | | | | | | | | | | | | |
| | E4-6 | W | | | | | | | | | | | | |
| | C4-60 | M | | | | | | | | | | | | |
| 3 | F5-4 | W) | | | | | | | | | | | | |
| | E5-4 | W | | | | | | | | | | | | |
| | F5-4 | W | | | | | <u>.</u> | | | | | | | |
| | C5-4 | W | | | | | Pm A | 906 in ha | H | 1-3: | debus | 1 | B | 81 |
| | | | | | | | B | 90% int | m J - | 43 | ho debnis | / | 700 | 7 |

| Laboratory name: | REI |
|------------------------------|--------------|
| Instrument | JEOL 100 N S |
| Voltage (KV) | 100 KV |
| Magnification | 20KX OKX |
| Grid opening area (mm2) | 0.011 |
| Scale: 1L = | 0.28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (rnm2) | |
| QA Type | |

| Cilent: | Kork | | | | |
|-----------------------------------|---------|--|--|--|--|
| Sample Type (A=Alr, D=Dust); | A | | | | |
| Air volume (L) or dust area (cm2) | 644 | | | | |
| Date received by lab | 8/12/11 | | | | |
| Lab Job Number: | 218701 | | | | |
| Lab Sample Number: | 780 499 | | | | |

| Analyzed by | |
|-------------------------------|----------------|
| Analysis date | 8/16/11 |
| Method (D≕Oirect, I=Indirect, | |
| IA=Indirect, ashed) | <u> </u> |
| Counting rules | AH |
| (ISO, AHERA, ASTM) | <u> </u> |
| Grid storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

| Fraction of primary filter used | | | |
|------------------------------------|---|---|-------------|
| Total Resuspension Volume (ml) | | | - : |
| Volume Applied to secondary filter | + | • | |

| Grid | Grid Opening | Structure | No. of Str | No. of Structures Dimensions | | Identification Mineral CI | | Identification Mineral Class | | | | | 1 = ves, blank = no | | |
|------|--------------|-----------|------------|------------------------------|--------|---------------------------|-------|------------------------------|----|------|-----------------|--------|---------------------|------|--|
| | | Туре | Primary | Total | Length | Width | | Amphibole_ | С | NAM | Sketch/Comments | Sketch | Photo | EDS | |
| A | 146-1 | MO | | | | | · | | | | · | | | | |
| | Glan | MS | | | | | | | | | | | | | |
| | 611-1 | M | | | | | | | | | | | | | |
| | F6-4 | ND | | | | | | | | | | | : | | |
| | F10-6 | M | | | | | (| | | | | · | | | |
| B | H3-6 | M | | | | | · | | · | | | · | | | |
| | 613-6 | MS | | | | | | | | | | | | - | |
| | E3-6 | ND | | | | | | | | | | | | | |
| | 63-6 | W | | | | | Por A | 90% in ha | J. | 2-50 | o debus | | R | 01 | |
| - | | | | | | | B | 80/6 ml | | 3-5 | ho debris | 7 | in | 8/16 | |

| Laboratory name: | REt |
|-----------------------|-----------------|
| Instrument | JEOL 100 N S |
| Voltage (KV) | 100 KV |
| Magnification | LOKX OKX |
| Grid opening area | |
| (mm2) | 0.011 |
| Scale: 1L = | 0.28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area | |
| (mm2) | 385 |
| Secondary Filter Area | |
| (rhm2) | |
| QA Tvoe | |

| Client : | Kork |
|-----------------------------------|---------|
| Sample Type (A=Air, D=Dust): | A |
| Air volume (L) or dust area (cm2) | 842 |
| Date received by lab | 8/12/11 |
| Lab Job Number | 218701 |
| Lab Sample Number. | 750 500 |

| Lab Sample Number. | 1 780 500 |
|---|------------|
| F-Factor Calculation (Indirect Pr | eps Only): |
| Fraction of primary fitter used | |
| Total Resuspension Volume (ml) | |
| Volume Applied to secondary fitter (ml) | |

| Analyzed by | 11/8 |
|---|----------------|
| Analysis date | 2/16/11 |
| Method (D=Direct, l=Indirect, IA=indirect, ashed) | D |
| Counting rules (ISO, AHERA, ASTM) | AH |
| Grid storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

| Grid | Grid Opening | Structure | No. of St | ructures | Dimensions | | Identification | Minerei Class | | Minerei Class | | | #11 | 1 = yes, blank = no | | |
|------|--------------|-----------|-----------|----------|------------|-------|----------------|---------------|----|---------------|-----------------|--------|---------|---------------------|--|--|
| 0,10 | | Туре | Primary | Total | Length | Width | i donamoution | Amphibole | С | NAM | Sketch/Comments | Sketch | Photo | EDS | | |
| A | H3-3 | M | | | | | · | | | | | | | | | |
| | 93-3 | ND | | · | | | | | | | | | | | | |
| | F3-3 | ND | | | | | _ | | | | | | | | | |
| | 23-3 | ND | | | | | | | - | | | | : | | | |
| | 24-3 | ND | | 1 | | | | · | | | | | | | | |
| P | H4-6 | M | | | | | · | | | | | | | | | |
| | 94-6 | ND | | | | | | | | | | | | | | |
| | FYL | ND | | | | | | · | | | | | | | | |
| | F5-3 | M | | | | | Pap A | 80% in ha | 13 | -5 | o dibne | fe | ne | nn | | |
| | | | | | | | B | 80 of | 17 | -5 | ho debnis | 7 | | | | |

| Laboratory name: | REI |
|-----------------------------|--------------|
| Instaiment | JEOL 100 N S |
| Voltage (KV) | 100 KV |
| Magnificatkın | 20KX OKX |
| Grid opening area (mm2) | 0.011 |
| Scale: 1L= | 0.28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | |
| QA Type | |

| Kork |
|---------|
| A |
| 846 |
| 8/12/11 |
| 218701 |
| 780 501 |
| |

F-Factor Calculation (Indirect Preps Only):

Fraction of primary filter used

Total Resuspension Volume (ml)

Volume Applied to secondary filter
(ml)

| 561 | |
|-----|--|
| | |
| | |

| Analyzed by | JB |
|---|----------------|
| Analysis date | 8/16/11 |
| Method (D=Direct, l=Indirect, IA=indirect, ashed) | D, |
| Counting rules (ISO, AHERA, ASTM) | AH |
| Grid storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

| Grid | Grid Opening | Structure | | | Dimensions | | Dimensions | | o. of Structures Dimensions | | <u> </u> | | 1 = ves, blank = no | | |
|------|--------------|-----------|---------|-------|------------|-------|------------|-----------|-----------------------------|-----|-----------------|--------|---------------------|-----|--|
| | | Туре | Primary | Total | Length | Wkith | | Amphibole | С | NAM | Sketch/Comments | Sketch | Photo | EDS | |
| A | K4-1 | W) | | | | | · | | | | | | | | |
| | 44-4 | M) | | | | | | | | | | | | | |
| | H4-1 | w) | | | | | | | | | | | | | |
| | 64-4 | M) | | | | · | | | | | | | | | |
| | 614-1 | _W) | | | | , | | | | | | | | | |
| 3 | H4-4 | M | | | | | · | | | | | | | | |
| | 64-4 | ND | | | | | | | | | | | | | |
| | 45-3 | M | | | | | · | | | | | | / | 1 | |
| | F5-3 | W | | | | | Dans A | 10% inter | 1 | 3-5 | o debus | 1 | Bu | 8 N | |
| | | | | · | | | B | 100 ho | | 3-5 | ho debris | /7 | | 1 | |

| Laboratory name: | REI |
|------------------------------|-----------------|
| Instrument | JEOL 100 N S |
| Voltage (KV) | 100 KV |
| Magnification | LOKX OKX |
| Grid opening area | |
| (mm2) | 0.011 |
| Scale: 1L = | 0.28 um |
| Scale: 1D ≖ | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | |
| QA Type | |

| Client : | Roll |
|-----------------------------------|---------|
| Sample Tvoe (A=Alr, D≃Dust): | A |
| Air volume (L) or dust area (cm2) | 912 |
| Date received by lab | 8/12/11 |
| Lab Job Number: | 218701 |
| Lab Samole Number: | 750 502 |

| Fraction of primary filter used | |
|---|---|
| Total Resuspension Volume (ml) | 1 |
| Volume Applied to secondary filter (ml) | |

| Analyzed by | 73 |
|---|----------------|
| Analysis date | 8/17/11 |
| Method (D=Direct, l=Indirect, IA=Indirect, ashed) | D |
| Counting rules (ISO, AHERA, ASTM) | AH |
| Grid storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

| Grid | Grid Opening | Structure | No. of St | ructures | Dime | nsions | Identification | Mineral Class | | | | 1 = y | es, blank | ≈ по |
|------|--------------|-----------|-----------|----------|---------|--------|----------------|---------------|-----|-----|-----------------|--------|-----------|--------------|
| | | Туре | Primary | Total | i_ength | Width | | Amphibole | С | NAM | Sketch/Comments | Sketch | Photo | EDS |
| A | F3-6 | W | | | | | | | | | | | | |
| | E3-6 | M | | | | | · | | | | · | | | |
| | 63-6 | M | | | | | | | | | | · | | |
| | B3-4 | M | | | | , | | | | | | | | |
| | B5-1 | M | | | | | (| | | | | | | |
| 3 | 64-3 | ND | | | | | | | | | | | | |
| | F4-6 | M | | | | | | | | | | | | |
| | F4-3 | W | | | | | | | | | | | | |
| | | | | | | | Pan A | 60% inter | lt. | 35 | o debus | | B | Slow |
| | | | | | | | B | 50 % l | , | 3-5 | ho delmis | / | T | , |

| Laboratory name: | REI |
|------------------------------|-----------------|
| Instrument | JEOL 100(N)S |
| Voltage (KV) | 100 KV |
| Magrification | EOKX OKX |
| Grid opening area (mm2) | 0.011 |
| Scale: 1L = | 0.28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | |
| QA Tyoe | |

| Client : | Kork |
|-----------------------------------|---------|
| Sample Type (A=Air, D=Dust): | A |
| Air volume (L) or dust area (cm2) | 912 |
| Date received by lab | 8/12/11 |
| Lab Job Number, | 218701 |
| Lab Sample Number. | 750 503 |

| Analyzed by | W |
|---|----------------|
| Analysis date | 8/17/11 |
| Method (D=Direct, I=Indirect, IA=Indirect, ashed) | D |
| Counting rules (ISO, AHERA, ASTM) | AH |
| Grid storage location | Month Analyzed |
| Scope Alignritent | Date Analyzed |

| F-Factor Calculation (Indirect Pre | eps (| <u> </u> | <u>. </u> | |
|---|-------|----------|--|--|
| Fraction of primary filter used | | | | |
| Total Resuspenskin Volume (ml) | | | | |
| Volume Applied to Secondary filter (ml) | | • | | |

| Grid | Grid Opening Structure No. of Structures | | Dimer | Dimensions Identi | | Identification Mineral Class | | | | 1 = yes, blank = no | | | | |
|------|--|------|---------|-------------------|--------|------------------------------|-------|-----------|---|---------------------|-----------------|--------|-------|------------|
| | | Туре | Primary | Total | Length | Width | | Amphibole | С | NAM | Sketch/Comments | Sketch | Photo | EOS |
| A | G5-4 | ND | | · . | | | · | . , | | | | | | |
| | FS-4 | NO | | | | | | | | | | | | _ |
| | 25-4 | 9 | | | | | | | | | | | | |
| | 24-4 | M | | | | | | | | | | | | |
| B | H3-6 | 20 | | | | | | | | | | | | |
| | G3-6 | M | | | | | | | | | | | | |
| | F3-6 | ND | | | | | · | | | | | | | |
| | F4.3 | N | | | | | | | | | | | | |
| | | | | | | | Pap A | 90% in ha | F | 3-50 | o dibns | for | 1 | معر |
| | | | | | | | B | 80 %h | , | 3-5 | ho Jehnis | | | De. 2 2000 |

| Laboratory name: | REt |
|-----------------------------|-----------------|
| Instrument | JEOL 100(N)S |
| Voitage (KV) | 100 KV |
| Magnification | LOKY OKX |
| Grid opening area (mm2) | 0.011 |
| Scale: 1L = | 0.28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | |
| QA Туре | |

| Client : | Kork |
|-----------------------------------|---------|
| Sample Type (A=Air, D=Oust): | A |
| Air volume (L) or dust area (cm2) | 914 |
| Date received by lab | 8/12/11 |
| Lab Job Number: | य४७०। |
| Lab Sample Number: | 780 504 |

| F-Factor Calculation (indirect Preps Only): | | | | | | | |
|---|---|---|--|--|--|--|--|
| Fractico of primary filter used | | | | | | | |
| Total Resuspension Volume (mi) | Γ | - | | | | | |
| Volume Applied to secondary filter (mi) | 1 | | | | | | |

| Analyzed by | 16 |
|---|----------------|
| Analysis date | 8/17/11 |
| Method (D=Direct, I=Indirect, IA=Indirect, ashed) | D |
| Counting rules (ISO, AHERA, ASTM) | AH |
| Grid storage (ocation | Month Analyzed |
| Scope Alignrhent | Date Analyzed |

| Grid | Grid Opening | Structure | No. of St | mctures | Dime | nsions | Identification | Mineral Class | | | | 1 = y | es, blank | = no |
|------|--------------|-----------|--------------|---------|--------|----------|----------------|---------------|----|-----|-----------------|--------|-------------|------------|
| | | Туре | Primary | Total | Length | Width | | Amphibole | С | NAM | Sketch/Comments | Sketch | Photo | EDS |
| A | G5-1 | M | | | j | <u> </u> | | • | | | | | | |
| | F5-1 | M | | | | · | | | | | | | | |
| | 25-1 | W | | | | | | | | | · | | | |
| | C5-1 | ND | | | | | | | | | | | | |
| 9 | F3-1 | 3 | | | | | t | | | | | | | |
| | 23-1 | M | | | | | | | | | | | | |
| | c3-1 | M | | | | | | | | | | | | |
| | c3-3 | MD | | | | | | | | | | | | |
| | | | | | | | Pm A | 20% in ha | 13 | -10 | to debus | 1/w | ~ R | , |
| | | | | | | | B | 80% | 15 | -10 | ho debnis | 7 | | |
| | | | WAS TO SHARE | • | | · | | | | | | | | Rev 8-2009 |

Month Analyzed

Date Analyzed

| Reservoirs | Environmental, Inc. |
|------------|---------------------|
| TEM Asbes | tos Structure Count |

| Laboratory name: | REI |
|-----------------------------|--------------|
| Instrument | JEOL 100 N S |
| Voltage (KV) | 100 KV |
| Magnification | ZOKXIOKX |
| Grkl opening area (mm2) | 0.011 |
| Scale: 1L = | 0,28 um |
| Scale: 1D = | 0.056 um |
| Primaly filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | |
| QA Tyoe | |

| Client : | Roll |
|------------------------------------|------------|
| Sample Type (A=Air, D=Dust): | A |
| Air volume (L) or dust area (cm2) | 914 |
| Date received by lab | 8/12/11 |
| Lab Job Number: | 218701 |
| Lab Sample Number: | 780 505 |
| F-Factor Calculation (Indirect Pre | eps Only): |

| (ISO, AHE | RA, ASTM | |
|------------|--|-------------|
| | ······································ | <u></u> |
| Grid stora | e location | |
| Scope Alig | nment | |

Analyzed by

| nm2) | 385 | raction of primary filter used |
|------------------------------|-----|---|
| econdary Filter Area nm2) | | Total Rasuspension Voluma (ml) |
| A Tyce | | Volume Applied to Secondary filter (ml) |
| | | |
| | | |

| /Comments S | Sketch F | Photo EDS |
|-------------|----------|-----------|
| | | |
| | | |
| | | |
| | | |
| | : | |
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| | | |
| | | |
| | / | |
| chrs = | 18 | |
| 11 . / | 1 | 8/19/11 |
| | Libns & | 11. |

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, $mm^2 = \# GO \text{ counted } x \text{ Average } GO \text{ Area } (mm)$

Concentration, $s/cc = \frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{I}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{11}{1000cc}$

Filter loading, s/mm² = # Asbestos structures Area Analyzed (mm²)

GO = TEM grid opening



August 19, 2011

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 218789-1 None Given

Project Description:

Pacificorp 3rd West Sub.

Eldon Romney R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 218789-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 218789-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description:

Pacificorp 3rd West Sub.

Date Samples Received:

August 15, 2011

Analysis Type:

TEM, AHERA

Turnaround:

3-5 Day

Date Samples Analyzed:

August 19, 2011

| Client ID Number | Lab ID N umber | | Area Analyzed | Air Volume Sampled | Number of Asbestos Structures Detected | Analytical Sensitivity | Asbestos Concentration | Filter Loading |
|---------------------|--------------------------|-----------------|------------------|--------------------------|--|---------------------------|---------------------------|-------------------|
| | | | (mm²) | (L) | | (s/cc) | (s/cc) | (s/mm²) |
| 3W-081111-S | EM | 78 1413 | 0.0990 | 880 | ND | 0.0044 | BAS | BAS |
| 3W-081111-N | EM | 7 81414 | 0.0990 | 874 | ND | 0.0044 | BAS | BAS |
| 3W-081111-E | EM | 781415 | 0.0990 | 874 | ND | 0.0044 | BAS | BAS |
| 3W-081111-W | EM | 781416 | 0.0990 | 870 | ND | 0.0045 | BAS | BAS |
| 3W-081211-S | EM | 7 8141 7 | 0.0990 | 880 | ND | 0.0044 | BAS | BAS |
| 3W-081211-W | EM | 781418 | 0.0990 | 880 | ND | 0.0044 | BAS | BAS |
| 3W-081211-N | EM | 781419 | 0.0990 | 882 | ND | 0.0044 | BAS | BAS |
| 3W-081211-E | EM | 78 142 0 | 0.0990 | 884 | ND | 0.0044 | BAS | BAS |

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity Average Grid Opening in mm² = 0.011 Effective Filter Area = 385 sq mm

DATA QA

Initials

| Due Date: 818-87 | 2 |
|------------------|---|
| Due Date. | |
| Due Time: | |

Contact

Contact

Phone Email Fax

Time

Initials

Results:

Reservoirs Environmental, Inc. seatlagen St. Denver, CO 90215 - Ph; 303 964-1386 - Fex 383-477-4275 - Toll Free :866 RESI-ENV

Pager : 803-5119-2098 INVOICE TO: (IF DIFFERENT) CONTACT INFORMATION antacti Dave Roskelle v Company Environmental 801 541-1035 Project Number and/or P.O. #: while menuiro.com due @ menino com Project Description/Location: POR FICE TO 20 West ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm REQUESTED ANALYSIS VALID MATRIX CODES LAB NOTES: RUSH (Same Day) PRIORITY (Next Day) STAMDARD Air = A Bulk = B (Rush PCM = 2tir, TEM = 6tir.) Dust = O Paint = P CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pm Soil = S Wipe = W RUSH ___ 24 hr. ___ 3-S Day Swab = SW F = Fbod stetal(s) / Dust Quant ™Prior notificațien le RCRAS/Metals & Welding Point Count Drinking Water = DW | Waste Water = WW ___ RUSH ___ S day ___10 day required for RUSH Funie Sean / TCLP O = Other tucnSmunds.** - AHERA, Level II, 7402, ISO, +/-, quant, Micro-vac, ISO-Indirect Preps "ASTM E1T92 approved wipe media only" 24 tir. ___ 3 day ___5 Day Organics MICROBIOLOGY LABORATORY HOURS: Weekdays: 9am - 6pm E.coli O1S7:HT, OnWorrns, S.aureus 24 m. 2 Day - 7400A, 7400B, OSHA Seimenella, Listeria, E.coll, APC, Y & M ___ 48 Hr. ___3-5 Day 24 Hr 48 Hr 3 Day RUSR Mold Salmonellæ +/-E.coll O157:H7: Turnaround times establish a laboratory priority, subject to laboratory volume and arb not guaranteed. Additional feet apply for attornours, weakends and holidays.** Matrix Code (L) / Area Special Instructions: EM Number (Laborator) Dais Time Uso Only) Collected Collected Client sample ID number (Sample ID's must be unique) 13W-081111-S ૦૪ ીવી ૧૧ 412 14 3W-081111 -N ZW-081111 - E 870 K 3W-08111-W 17 081121 W 12 3W-081211 - W 19 287 3W-081211 - N 9 Number of samples received: (Additional samples shall be listed on attached (ong form.) NOTE HEI et and passing incoming earnies based upon information received and will not tw responsible for errors or carissions in calculations resulting from the inaccuracy of original data. By signing client/company representative agrees that submission of the following samples for requested analysis as in Bested on this Chair of Custody restricts an analytical servicec agreement with payment tenns of NET 30 days, failure to comply with payment tenns may retuit in a 1.5% monthly interest surdisage. Date/Time: 8/12 Sample Condition: On Ice Sealed Intact Relinquished By: Mes/No Laboratory Use Only Yes / No Yes / No Received By Date 8/19/11 Time Contact Phone Email Fax Initiats/ Phone Email Fax Time

> Contact Phone Email Fax 7950 7762 5007 7-2011 version 1

Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

| Α | = | Amosite | F = | Fiber |
|----|---|---------------|-----|---------|
| An | = | Anthophyllite | B = | Bundle |
| C | = | Chrysotile | C = | Cluster |
| Cr | = | Crocidolite | M = | Matrix |
| Т | = | Tremolite | | |

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

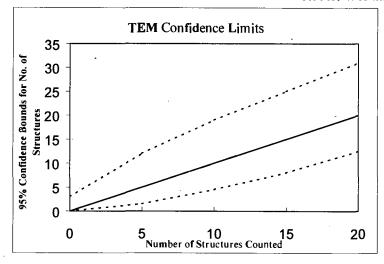
XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

| Laboratory name: | REI |
|--------------------------------|--------------|
| Instrument | JEOL 100 N S |
| Voltage (KV) | 100 KV |
| Magnification | 20KO IOKX |
| Grid opening area (mm2) | 0.011 |
| Scale: 1L= | 0.28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area | |
| (mm2) Secondary Fitter Area | 385 |
| (mrı2) | |
| QA Type | |

| Client : | Rak |
|-----------------------------------|-------------|
| Sample Type (A=Air, D=Dust): | A |
| Air volume (L) or dust area (cm2) | 880 |
| Date received by lab | slish |
| Lab Job Number: | 218789 |
| Lab Sample Number: | 781413 |
| | |

| Analyzed by | 1K/5B |
|---|----------------|
| Analysis date | 8/19/11 |
| Method (D=Direct, I=Indirect, IA=Indirect, ashed) | D |
| Counting rules (ISO, AHERA, ASTM) | AH |
| Grid storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

| F-Factor Calculation (Indirect Pr | eps Only): |
|---|--|
| Fraction of primary filter used | |
| Total Resuspension Volume (ml) | |
| Volume Applied to secondary filter (ml) | |

| Grid | Grid Opening | Structure Type | No. of Structures | | Dimensions | | Identification | Mineral Class | | | 1 = yes, blank = no | | | |
|------|--------------|-------------------|--|-------|------------|-------|----------------|---------------|------|-----|---------------------|---|--|-----|
| | | | Primary | Total | Length | Width | identineation | Amphibole | C | NAM | Sketch/Comments | | | EDS |
| A | 45-6 | W | | | | | | | | | · | | | |
| | H5-6 | ND | | | | | | | | | | | | |
| | 94-4 | M | | | | | | | | | | | | · |
| | K3-1 | QN | | | | | | | | | | | | |
| | L5-1 | M) | | | | Pre | pH ~ | 50 /. (Ntack | - 3- | 5% | Debris | | | |
| B | E5-4 | ND | | | | | | | | | | | | |
| | 05-4 | M | | | | | | | | | · | | | |
| | B5-4 | 130 | | | | | · | | | · | | | | |
| | B4-4 | M | | | | Pre | PBA | Pres A | | 1 | n/hun | _ | | |
| | | | de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la | | | | | | | | | | | |

| Reservoirs | Environmer | ntal , 1 nc. |
|------------|--------------|---------------------|
| TEM Asbes | tos Structur | e Count |

| | |
|-----------------------------|--------------|
| Laboratory name: | REI |
| Instrument | JEOL 10(N S |
| Voltage (KV) | 100 KV |
| Magnification | 20KX 10KX |
| Grid opening area (mm2) | 0.011 |
| Scale: 1L= | 0.28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | |
| QA Туре | |

| Client : | ROR |
|-----------------------------------|---------|
| Sample Type (A=Air, D=Dust): | A |
| Air volume (L) or dust area (cm2) | 874 |
| Date received by lab | 8/15/11 |
| Lab Job Number: | 218789 |
| Lab Sample Number: | 7814 14 |
| | 7 7 |

| Edb Gairipio (1011)DOI: | 1 2 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 |
|---|---|
| F-Factor Calculation (Indirect Pre | eps Only): |
| Fraction of primary filter used | |
| Total Resuspension Volume (mi) | |
| Volume Applied to secondary filter (ml) | |

| Analyzed by | 1/53 |
|-------------------------------|----------------|
| Analysis date | 8/19/11 |
| Method (O=Direct, I=Indirect, | 7 |
| IA=Indirect, ashed) | i |
| Counting rules | ALL |
| (ISO, AHERA, ASTM) | |
| Grid storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

| Grid | Grid Grid Opening | | No. of Structures | | Dimensions | | Identification | Mineral Class | | | | 1 = yes, blank = no | | |
|------|-------------------|------|-------------------|-------|------------|-------|----------------|---------------|-----|-----|-----------------|---------------------------------------|-------|-----|
| | | Туре | Primary | Total | Length | Width | | Amphibole | С | NAM | Sketch/Comments | Sketch | Photo | EDS |
| A | (13-4) | ND | 9 | | | | | | | | | · | | |
| | F3-4 | ND | | | | | | | | | | | · | |
| | 23-4 | ND | | | · | | | | · | | ··· | | | |
| | C3-4 | MD | | | | | | | | · | | | | |
| | C3-6 | ND | | | Pn | ep A | 90/ m | ma 3-5% | dek | ris | | | | - |
| B | F2-6 | ND | | | | | | | | | | · | | |
| | 824 | N | | | | | | | | | | | | |
| | K4-1 | M) | | | | | | | | | | | | |
| | 44-1 | W | | | Pn | ер | B~A | 1 | in | Va | a | | | |
| | | | | | | | | | | , | | · · · · · · · · · · · · · · · · · · · | · | |

| Laboratory name: | REI |
|-----------------------------|--------------|
| Instrument | JEOL 100 N S |
| Voltage (KV) | 100 KV |
| Magnification | 20KX 10KX |
| Grid opening area (mm2) | 0.011 |
| Scale: 1L = | 0.28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | |
| QA Tvoe | |

| ROR |
|---------|
| A |
| 874 |
| क्षीड/n |
| 218789 |
| 7814 15 |
| |

| F-Factor Calculation (Indirect Preps Only): | | | | | | | |
|---|--|--|--|--|--|--|--|
| Fraction of primary filter used | | | | | | | |
| Total Resuspendon Volume (ml) | | | | | | | |
| Volume Applied to secondary filter (ml) | | | | | | | |

| Analyzed by | 1K/SI) |
|---|----------------|
| Analysis date | 8/19/1 |
| Method (D≈Direct, I≃Indirect, IA=Indirect, ashed) | D |
| Counting rules (ISO, AHERA, ASTM) | AH |
| Grid storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

| Grid | Grid Opening | Structure | No. of St | mctures | Dime | mensions Identification | | Mineral Class | | | | 1 = yes, blank = no | | |
|-------------|--------------|-----------|-----------|-----------|----------|-------------------------|-------------|---------------|-------|------|-----------------|---------------------|-----------------|-------------|
| | | Туре | Primary | Total | I.ength | Wkith | | Amphibole | С | NAM | Sketch/Comments | Sketch | Photo | EOS |
| A | 94-4 | MD | | | | | | | | | | | | |
| | F4-4 | ND | | | | | | | | | | | | |
| | F4-6 | ND | | | | | | | | | | | | |
| | 94-6 | ND | | | - | · | 1 | | | | | | | |
| | (95-le | M | | · · · · · | | fres | of gr | 1. Intact | 35/ | deb | ù | | | |
| B | (13-6 | MO | | | | | | | | | · | | | |
| | F3-6 | ND | | | | | | · | | | | | | |
| | 836 | M | | | | | | | | | | | | |
| | 94-6 | W | | | · | Prep | B ~50% | intact 3- | 5/100 | bris | ful. | Ine | | |
| · | | | | | | | | | 1 | | 1 | | | |
| | | | | | <u> </u> | ·· | | | | | | | . ! | Rev 3-2009 |

| | 1 |
|-----------------------|---------------|
| Laboratory name: | REI |
| Instrument | JEOL 100 N(S) |
| | |
| Voltage (KV) | 100 KV |
| Magnification | 20KX 10KX |
| Grid opening area | |
| (mm2) | 0.011 |
| Scale: 1L = | 0.28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area | |
| (mm2) | 385 |
| Secondary Filter Area | |
| (mm2) | |
| QA Tvoe | |

| 7,2117 77000000001 | actara const |
|-----------------------------------|--------------|
| Client : | Rak |
| Sample Type (A=Air, I)=Oust): | A |
| Air volume (L) or dust area (cm2) | 870 |
| Date received by lab | ะในรไก |
| Lab Job Number: | 218789 |
| Lab Sample Number: | 7814 16 |
| | |

| Analyzed by | 533 |
|--|----------------|
| Analysis date | 8/19/11 |
| Method (D=Direct, l=Indirect, IA=Indirect, astved) | D |
| Counting rules (ISO, AHERA, ASTM) | AH |
| Grid storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

| F-Factor Calculation (Indirect Pr | eps Only): |
|------------------------------------|------------|
| Fraction of primary filter used | |
| Total Resuspension Voluma (mi) | |
| Volume Applied to secondary filter | |

| Grid | Grid Opening | Structure | No. of Str | uctures | Dimensions | | Dimensions | | Identification | Mineral Class | | | · | 1 = yes, blank = no | | |
|------|--------------|-----------|------------|---------|------------|-------|------------|------------|----------------|---------------|-----------------|--------|-------|---------------------|--|--|
| | | Туре | Primary | Total | Length | Width | 8 | Amphibole | | NAM | Sketch/Comments | Sketch | Photo | EDS | | |
| A | 144 | NO | | | | | · | | | | | | | | | |
| | 144-4 | MS | | | Pa | o A | 95 | Lainbru | 1 | 3- | 5% debr | ~5 | | | | |
| | K4-4 | M | | | On | OR | 700 | he is been | 4 | 3. | 5 hod be | n 5 | | | | |
| | 644 | M | | | | | | sk | 7 | 1 | | | | | | |
| | F4-1 | M | | | | | | 1/4 | ns | 81 | 19/4 | | | | | |
| B | 196-4 | M | | | | | | 17 | | | 7 | | | | | |
| | F6-4 | M | | | | | • | <i>/</i> . | | | | | | | | |
| | F6-1 | 8 | | | | | | | | | | | | ! | | |
| | Elo-1 | W | | | | | | | | | | | | · · · · · | | |
| | | | | | | | | | | · | | | | | | |

| Laboratory name: | REI |
|-----------------------------|----------------|
| Instrument | JEOL 100 N (S) |
| Voltage (KV) | 100 KV |
| Magnification | 20KX 10KX |
| Grid opening area (mm2) | 0.011 |
| Scale: 1L= | 0,28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | |
| QA Type | |

| 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | 40/210 40411 |
|---|---|
| Client : | R&R |
| Sample Type (A=Air, D=Dust): | A |
| Air votume (L) or dust area (cm2) | 880 |
| Date received by lab | 8/15/11 |
| Lab Job Number: | 218789 |
| Lab Sample Number: | 781417 |
| | , |

| Analyzed by | JB |
|---|----------------|
| Analysis date | 8/19/11 |
| Method (D=Direct, l=Indirect, IA=tndirect, ashed) | 1 5 |
| Counting rules (ISO, AHERA, ASTM) | AH |
| Grid storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |
| | • |

| F-Factor Calculation (Indirect Preps Only): | | | | |
|---|--|--|--|--|
| Fraction of primary filter used | | | | |
| Total Resuspension Volume (mi) | | | | |
| Volume Applied to secondary filler (ml) | | | | |

| Grid | Grid Opening | Structure | No. of St | ructures | Dime | nsions | Identification | entification Mineral Class | | Mineral Class | | Mineral Class | | 1 = yes, blank = no | | = no |
|------|--------------|---------------|-----------|----------|----------|--------|---|----------------------------|-----|---------------|-----------------|---------------|-------|---------------------|--|------|
| | | Туре | Primary | Total | Length | Width | - I - I - I - I - I - I - I - I - I - I | Amphibole | С | NAM | Sketch/Comments | Sketch | Photo | EOS | | |
| A | 64-4 | M | | | | | | | | | | | | | | |
| . , | 64-1 | \mathcal{M} | | F |) ~0_ | Ą | 80% | nbent | 3- | Sho | de bus | | | | | |
| | 1=4-4 | M | | + | np | 3 | 100/0 | in but | 3-5 | oho | lebus | | · | | | |
| | F4-1 | M | | | | | | - 6 | // | | | | | , , | | |
| | EHH | MD | | | | | | 1 Bay | 1/5 | ligi | () | | · | | | |
| B | K41 | W) | | | | | | 77 | | 7 7 | | | | | | |
| | HU-1 | N) | | | | | (| | | | | | | | | |
| | 64-1 | M | | | | | | · | | | | | | | | |
| | FUL | W | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | · . - | | |

Rev 3-2009

| Laboratory name: | REI |
|-----------------------------|-------------|
| Instrument | JEOL 100 NS |
| Voltage (KV) | 100 KV |
| Magnification | 20KX 10KX |
| Grid opening area (mm2) | 0.011 |
| Scale: 1L= | 0.28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | |
| QA Type | |

| | 40(410 00411) |
|-----------------------------------|---------------|
| Client : | ROR |
| Sample Type (A=Alr, D=Dust): | A |
| Air volume (L) or dust area (cm2) | 810 |
| Date received by lab | 8/15/11 |
| Lab Job Number: | 218789 |
| Lab Sample Number: | 7814 18 |
| | 1 10 |

| F-Factor Calculation (Indirect Prepare | o Only). |
|---|----------|
| Fraction of primary filter used | •• |
| Total Resuspension Volume (ml) | |
| Volume Applied to secondary filter (ml) | · · · |

| Analyzed by | 575 |
|-------------------------------|----------------|
| Analysis date | Stela |
| Method (D=Direct, l=Indirect, | 4 |
| IA=indirect, ashed) | <u> </u> |
| Counting rules | 1 AIL |
| (ISO, AHERA, ASTM) | HT. |
| Grid storage location | Month Analyzed |
| Scooa Alignment | Date Analyzed |

| Grid | Grid Opening | Structure | No. of St | ructures | Dimensions | | Dimensions Identification Mineral Class | | | | | 1 = yes, blank = | | = no |
|------|--------------|-----------|-----------|----------|------------|-------|---|-----------|------|-----|------------------|------------------|-------|------|
| | one opening | Туре | Primary | Total | Length | Widih | | Amphibole | С | NAM | Sketcti/Comments | Sketch | Photo | EDS |
| A | 14-1 | NO | | | | | | | | | | | · | |
| | 64-1 | \sim | | | | | | , | | | | | | · |
| | 44-6 | W | | | mo | A | 80% | inbud | | 3- | 5% det | en s | 2 | |
| | G4-6 | w) | | | Pr | 3 | 80% | in tent | _ | 3-1 | -of Ack | r m | | / |
| | F4-6 | , W) | | | | | | 4 | | | | | | |
| B | K4-3 | M | | | | | | and s | 1191 | n _ | | | | |
| | 144-3 | W) | | | | | 1 | | 1 | | | | | |
| | 64-3 | W | | | | | | | | | | | | |
| | F4-3 | N/S | | | | | | · | | | | | | |
| | | | | | | | | | | | | | | |

| Reservoirs | Environmental, | tnc. |
|------------|------------------|--------|
| TEM Ashea | tos Structure Co | arin t |

| Laboratory name: | REI |
|-----------------------------|--------------|
| Instrument | JEOL 100 W S |
| Voltage (KV) | 100 KV |
| Magnification | 20KX 10KX |
| Grid opening area (mm2) | 0.011 |
| Scale: 1L = | 0.28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | |
| QA Type | |

| RAR |
|---------|
| A |
| 882 |
| s/15/n |
| 218789 |
| 7814 19 |
| |

| F-Factor Calculation (Indirect Preps Only): | | | | | |
|---|--|--|--|--|--|
| Fraction of primary filter used | | | | | |
| Total Resuspension Volume (ml) | | | | | |
| Volume Applied to secondary filter (mi) | | | | | |

| Analyzed by | J13 |
|---|----------------|
| Analysis date | stali |
| Method (D=Direct, l=Indirect, IA=Indirect, ashed) | 151 |
| Counting rules (ISO, AHERA, ASTM) | AH |
| Grid storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

| Grid | Grid Opening | Structure | No. of Str | ructures | Dime | nsions | Identification Mineral Class | | ass | | | 1 = yes, blank = no | | |
|------|--------------|-----------|------------|----------|--------|--------|------------------------------|-----------|------|-----------|-----------------|---------------------|-------|-----|
| | | Туре | Primary | Total | Length | Width | | Amphibole | С | NAM | Sketch/Comments | Sketch | Photo | EDS |
| A | F5-6 | M | | | , | | | | , | | | : | | |
| | E5-6 | M | | | | | | | | | | | | |
| | C5-6 | M | | | | صمحا | A 8 | 50% int | ent | 3 | -5/2 del | n4 | | |
| | 65-1 | NO | | | 1 | 20 | Ba | A | | | | | | |
| | F5-1 | M | | | • | • | | 1. | | | // | · | | |
| B | K3-1 | M | | | | | | | Sand | l] Lli | 4/11 | | | |
| | H3-1 | M | | | | | | 74 | (| 7, | 7 | | | |
| | 13-3 | N | | | | | / | | | | | | | |
| | 43-3 | W | | | | | | | | | | | | |
| | | | | | | | | | | | | | í | |

| Laboratory name: | REI |
|-----------------------------|------------|
| Instrument | JEOL 100 N |
| Voltage (KV) | 100 KV |
| Magnification | 20KX 10KX |
| Grid opening area (mm2) | 0.011 |
| Scale: 1L = | 0.28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | · |
| QA Type | |

| TENT / GOOGLOG OB GOLGIO COUNT | | | | | |
|-----------------------------------|---------|--|--|--|--|
| Client : | R+R | | | | |
| Sample Type (A=Alr, D=Dust): | A | | | | |
| Air volume (L) or dust area (cm2) | 884 | | | | |
| Date received by lab | 8/15/10 | | | | |
| Lab Job Number: | 218789 | | | | |
| Lab Sample Number: | 781420 | | | | |
| | | | | | |

| F-Factor Calculation (Indirect Pr | eps Only): |
|---|------------|
| Fraction of primary filter used | |
| Total Resuspension Volume (ml) | |
| Volume Applied to secondary filter (ml) | |

| Analyzed by | 716 |
|-------------------------------|----------------|
| Analysis date | 8/19/11 |
| Method (D≃Direct, 1=Indirect, | |
| IA=Indirect, ashed) | <u> </u> |
| Counting rules | 1 AIL |
| (ISO, AHERA, ASTM) | |
| Grid storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

| Grid | Grid Opening | Structure | No. of Str | uctures | Dime | nsions | Identification | on Mineral Class | | | | 1 = yes, blank = no | | |
|------|--------------|---------------|------------|---------|--------|--------|----------------|------------------|------|--------------|-----------------|---------------------|-------|------------|
| 0.10 | ond opening | Туре | Primary | Total | Length | Width | | Amphibole | С | NAM | Sketch/Comments | Sketch | Photo | EDS |
| A | 64-1 | M | | | | | • | · | | | | | | |
| | F4-1 | MD | | | | Pmp | AVE | 80% | 0 (1 | m | 1 3-5% | o de | bri | <u> </u> |
| | E4-1 | M | | | | | | | ih | | 7 | · · · · · · | | |
| | C4-1 | W | | | | | | | S | | shaki | | | |
| | E3-6 | M | | | | | | /+ | | | // | | | |
| B | 1+4-6 | W | | | | | | | | | | | | |
| | 674-6 | W | | | | | | | | · | | | | |
| | H3-6 | \mathcal{M} | | | | | | | | · | | | | |
| | 63-6 | ND | | : | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| : | | | | | | | | | | , | | | | Ray 3-2009 |

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration, $s/cc = \frac{\# \text{ Asbestos Structures}}{\# \text{ GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{11}{1000cc}$

Filter loading, s/mm² = $\frac{\text{\# Asbestos structures}}{\text{Area Analyzed (mm'^2)}}$

GO = TEM grid opening



August 25, 2011

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 219017-1 None Given

Project Description:

3rd West Sub Station

R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 219017-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 219017-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description:

3rd West Sub Station

Date Samples Received:

August 18, 2011

Analysis Type:

TEM, AHERA

Turnaround:

3-5 Day

Date Samples Analyzed:

August 24, 2011

| Client ID Number | Lab ID Number | | Area Analyzed | Air Volume | Number of Asbestos | Analytical Sensitivity | Asbestos Concentration | Filter Loading |
|---------------------|------------------|-----------------|------------------|---------------|------------------------|---------------------------|---------------------------|-------------------|
| | | | | Sampled | Structures Detected | . • | | |
| | | | (mm²) | (L) | | (s/cc) | (s/cc) | (s/mm²) |
| 3W-081511-N | EM | 782926 | 0.0880 | 960 | ND | 0.0046 | BAS | BAS |
| 3W-081511-E | EM | 782927 | 0.0880 | 9 5 6 | ND | 0.0046 | BAS | BAS |
| 3W-081511-S | EM | 782928 | 0.0880 | 960 | ND | 0.0046 | BAS | BAS |
| 3W-081511-W | EM | 782929 | 0.0880 | 960 | ND | 0.0046 | BAS | BAS |
| 3W-081611-E | EM | 7829 3 0 | 0.0880 | 928 | ND | 0.0047 | BAS | BAS |
| 3W-081611-N | EM | 7829 31 | 0.0880 | 926 | ND | 0.0047 | BAS | BAS |
| 3W-081611-S | EM | 7829 3 2 | 0.0880 | 928 | ND | 0.0047 | BAS | BAS |
| 3W-081611-W | EM | 7829 33 | 0.0880 | 930 | ND ND | 0.0047 | BAS | BAS |

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity

Effective Filter Area = 385 sq mm

Average Grid Opening in mm² = 0.011

DATA QA

| Duo | Date: | <u>823-825</u> |
|-----|-------|----------------|
| Due | Time: | 8457 |



Page __1__of__/_

| | .• | | | INVOIC | ETO: (IF | DIFF | ERE | NT) | | | | | | | | | | CO | NTAC | T INI | ORM | ATION | l: | | | |
|-----------------------|---|---------------------------------------|----------------------------|---|-----------------|---------------|----------------|------------|------------|---|-----------------|------------------------------|---------------|--------|-----------------|--------------|--|---------------|-----------------------------|-------------|-----------------|----------------------|------------------------------|-----------------|----------|-------------|
| Company: Z | FR Environm | ental | | Compeny: | | | | | | | tect: | (Jau | R | Roy | ke | Щ, | | | | | | Jus | th Kao | عنه | | |
| Address: L | 1 W 9000 S | | | Address | | | | | | Pho | ne: | 801 | | | | | | | | | Phone: | 801 | 828-52 | લ | | |
| <u>5u</u> | nd 14.84 | 070 | | | | | | | | Fax | | | | | | | | | | | Pape | | | | | |
| | | | | <u> </u> | | | | | | | pager: | | | | | | | | | | Cell/peg | <u> </u> | | | | |
| Project Number | | | | | | | | | | | | Oallw | | | - | | | | | ١. | \sim | | | | | |
| Project Descripti | on/Location: 5/6 | - West Si | do Stration | (PWV) | <u>a.)</u> | علد | ह्य | <u>5/u</u> | _ | <u> </u> | <u>au</u> | <i>L</i> (0) | <u>.c</u> | Pu | V | <u>ro</u> . | Cow | ` | <u>رسي</u> | 49~ | 6.1 | <u>ren</u> | 100.com | <u> </u> | | |
| ASBESTO | S LABORATORY H | OURS: Weekday | s: 7am - Tpm | | | | | | F | REQUI | ESTI | ED A | NA | LYS | S | | | | | VAL | D MA | TRIX | CODES | L | AB NO | res: |
| PLM / PCM | TEMRUS | | PRIORITY (Next Day |) <u>X</u> STANDARD | | H | | | | | | | | | | | | | | \lr = / | | | Bulk • B | | | |
| | | | 2hr, TEM = Bhr.) | | | | | | - 1 | | | | 11 | ı | | | | ١ | | ust = | | ┷ | Paint = P | | | : |
| | RY LABORATORY H | OURS: Weekda | ys: 8am - 5pm | | | | | 1 1 | - [| | | - | | | | ļ | | ļ | | ioil = | | | Wipe ⇒W | | | |
| Matal(s) / Di | • | RUSH | 24 hr3-6 Day | **Prior nedfless | on is | | Quent | 1 1 | | | | | 1 | 5 | | | | | | ab = : | | | F = Food Waste Water = WW | | | |
| RCRAB/Mi Fume Seen | ejais & WeMing | RUSH | 5 day IO day | required for Ri | JSH | 5 | | | | 5 | | 1 | | 휆 | | - | 5 | ŀ | Drinking | Wat | | | te Water = VVV | <u> </u> | | |
| | / ICLP | 24 hr | 3 day5 Day | tumasecinda. | •• | Point Count | * • | 1 | - | Metals Scar | | | | 劐 | | | 3 6 | - 1 | MA ST | M E47 | | Other | pe madia only** | | — | |
| Organiee MICRORIC | LOGY LABORATO | | | <u> </u> | | 2 | 8 8 | 1 1 | | ₹ | | | 11 | ਰੱ | ş | <u> </u> | E Z | ŀ | A01 | 1 | or app | OK U WI | DO INSCITUTION | - - | | |
| | :H7, Coliforne, 8.aure | | 24 hr2 Day | 3-5 Day | | | | | | | | | | 히 | 18 | 8 8 | 2 2 | - 1 | | | ŀ | | | | | |
| | Listeria, E.coll, APC, | | 3-5 Day | | | ğ | 7402, 50-th | OSHA | 2 | 2 | | - | | 丰賣 | | 量量 | \$ 0 | ļ | | 1 | - | | | - | | |
| Meld | , 2000, 10, 2000, 711 O | | RUSH24 Hr | | 5 Day | 5 | 20 7. H. A. | | Respirable | . ₽ | | ‡ | | 비통 | 2 | 0 B | 看多 | ı | | | | | | — | | |
| **Turnerwund | itimes estabilah a jaborat | ory priority, subject to | | | | 岁 | ξĒ | 7400B, | 2 | ¥ X | Εİ | ≯ ₩ | | 8 2 | 1 | . 5 | 활돌 | | ٥ | 1 | - - | | | | | |
| | | ply for aftoriwurs, was | | | | 1.0 | ≨₹ | | ᡤ | Aga, | \$ | 1 6 | ‡ | 퇿 | • | . * | . 5 | ŀ | Ē | اہا | e | | 1 | | | |
| Special hast | meUone; | · · · · · · · · · · · · · · · · · · · | | | | Short report, | 돌 폭 | 7400A, | Tg gg | WETALS - Analyte(e) RCRA 8, TCLP, Welding Furne, | ORGANICS - METH | Salmonelle: E.coli 0157:1 | Listeria: +/- | 3 | Ĕ | Yalk + a Qua | Mold: +/-, identification, Qu fPLER'S INITIALS OR OTHER | - | Sample Volume (L) / Area | Matrix Code | Container | <u>.</u> | _ | EM N | ımber | (Labaratory |
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| Client sar | mple ID number | (Sampl | e ID'a muat be unique |) | | 2 | Sea Le | Š | DUST | # 55 | 8 | | | ROBI | OFO | Ϋ́ | 3 | | 35 | 8 | #[| muladiya muladiya | | | | |
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| | amples received: I will analyze Incoming sampl | as besedupen information | | nel samples shaa b seconsible for oncre or i | | | | | | | zaCV O | f origin | ما ده | n. Bv | ther inc | dieni | /nomners | rene | samafu | agrag | a finat se | hmission | of the following : | emoles for r | oouostad | |
| analyab as | Indicated on this Chain of Co | ustody shall appresitivite as | enalytical services pareem | ent with payment terms : | of NET 30 days, | , tellur | a te eo | npty wi | th pa | ymant ta | ma (1) | ay 10a | it in a | 1.5% | mont | ty Inte | real sund | arge. | | | 4,1 | | | | | |
| Relinquis | hed By: | // 7 | Bage of 7. | 795¢ = | 705 | 4 | g | Bale | /Tim | ne; | | | | | | | | | San | nple (| onditi | on: | On los | Sealed | inta | .ct |
| | y Use Only | \mathcal{X} | | | | | | | | | erner. Edit | | | | | | Temp. (F°) Yes / No Yee | | | Yee / No | Yea | | | | | |
| Degradies | Contact | Phone Email F | | Time | Initia | | | ntact | | Ju-1101 | | Phone | | | _ | | | | Dale | | | 7 | lme | init | als | |
| | Contact | Phone Empil E | | Time | initia | | _ | ntant | | • | | Dhon | | | | • | _ | |)ala | | | | mo | init | | |

Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

| A = Amosi | ite F | = | Fiber |
|-------------|------------|---|---------|
| An = Antho | phyllite B | = | Bundle |
| C = Chrys | otile C | = | Cluster |
| Cr = Crocio | dolite M | = | Matrix |
| T = Tremo | alite | | |

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

Sizing Conversion

1 length unit = 5 mm on screen = 0.278 micron

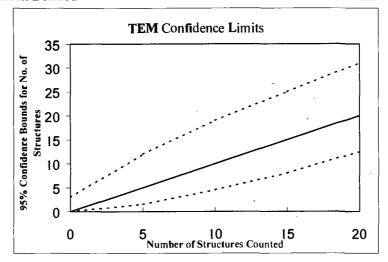
1.80 length units = 0.5 micron

18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

| Laboratory name: | REI |
|-----------------------------|--------------|
| Instrument | JEOL 100 N S |
| Voltage (KV) | 100 KV |
| Magnification | (20K)X 10KX |
| Grid opening area (mm2) | 0.011 |
| Scale: 1L = | 0.28 um |
| Scale: 10 = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | |
| QA Type | |

| Client : | RAR |
|-----------------------------------|---------|
| Sample Type (A=Air, D=Dust): | A |
| Air volume (L) or dust area (cm2) | 960 |
| Date received by lab | 8-18-11 |
| Lab Job Number: | 219017 |
| Lab Sample Number: | 782926 |

F-Factor Calculation (Indirect Preps Only):

Fraction of primary filter used Total Resuspension Volume (ml) Volume Applied to secondary filter

| iA=Indirect, ashed) |
|-----------------------|
| Counting rules |
| (ISO, AHERA, ASTM) |
| |
| Grid storage location |
| |
| Scope Alignment |
| |
| |
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| |
| |

| 1 AH |
|----------------|
| 8-24-11 |
| 4 |
| Ahera |
| Month Analyzed |
| Date Analyzed |
| |

| nowak | |
|--------|-------|
| Dupala | 8/25/ |

| Grid | Grid Opening | Structure | No. of St | ructures | Dime | nsions | Identification | Mineral Class | | | | 1 = yes, blank = no | | | |
|------|--------------|-----------|-----------|--------------|------------|--------|----------------|---------------|-----|-----|-----------------|---------------------|----------|-----|--|
| Ond | One opening | Туре | Primary | Total | Length | Width | | Amphibole | С | NAM | Sketch/Comments | Sketch | Photo | EDS | |
| A | 66-1 | an | | | | | | | | | | | | | |
| | F6-4 | M | | , . | | | | | | | | | <u> </u> | | |
| | Flo-1 | M | | Pier | A: 8 | PO 9 | intact | 3% de | 625 | , | | | | | |
| | E &4 | M | | Pier C | <u>ر</u> د | Pren | / / / | | | | | | _ | | |
| | E6-1 | 2 | | - - V | | | | | | | | | | | |
| B | F3-6 | √√ | | | | | | | | | | | _ | | |
| | F3-3 | 7 | | | | | | | | | | · | | | |
| | E34 | 4 | | | | X | | | · | | | | | | |
| | | | | | | | | | | | | | | | |
| | · | | | | · | | | | | • | · | | · | | |

| Laboratory name: | REI |
|-----------------------------|----------------|
| Instrument | JEOL 100 N (S) |
| Voltage (KV) | 100 KV |
| Magnification | 20KX 10KX |
| Grid opening area (mm2) | 0.011 |
| Scale: 1L = | 0.28 um_ |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | |
| QA Tyoe | |

| Client : | RaR |
|-----------------------------------|---------|
| Sample Type (A=Air, D=Dust): | A |
| Air volume (L) or dust area (cm2) | 956 |
| Date received by lab | 8-18-11 |
| Lab Job Number: | 219017 |
| Lab Sample Number. | 782927 |
| | |

| Analyzed by | AH |
|---|----------------|
| Analysis date | 8-24-11 |
| Method (D=Direct, I=Indirect, IA=Indirect, ashed) | 0 |
| Counting rules (ISO, AHERA, ASTM) | Ahera |
| Grid storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

| F-Factor Calcutation (Indirect Preps Only): | | | | |
|---|--|--|--|--|
| Fraction of primary filter used | | | | |
| Total Resuspension Volume (ml) | | | | |
| Volume Applied to secondary filter (ml) | | | | |

| Grid | Grid Opening | Structure | No. of Str | ructures | Dime | nsions | Identification | Mineral Class | | | | 1 = y | es, blank | = no |
|------|--------------|-----------|------------|----------|--------|--------|-----------------|---------------|----|-----|-----------------|--------|-----------|------|
| Sild | Ond Opening | Туре | Primary | Total | Length | Width | idelitification | Amphibole | С | NAM | Sketch/Comments | Sketch | Photo | EDS |
| A | 65-4 | ND | | | | | | | | | | | · | |
| | G5-1 | ND | | ·: | | | | | | | · | | | |
| | F5-4 | ND | | مرا | A- | 809 | vintae | + 5% | de | 625 | | | | · |
| | F5-1 | ND | | Crec | (B) | Pie | 1 | | | | | | | |
| B | 15-3 | No | | | · | | | | | | | | | |
| | 165-6 | M | | | | | | \mathcal{A} | | | · | | | |
| | K5-3 | ND | | | | | | | | | · | | | |
| | H54 | $\Delta $ | | | | | | | | | | | | |
| | | | | | | | | , | | | | | | |
| | | | | | | | | | | | · | | · | |

| Laboratory name: | REI |
|-----------------------------|---------------|
| Instrument | JEOL 100 N(S) |
| Voltage (KV) | 100 KV |
| Magnification | (20KX 10KX |
| Grkl opening area (mm2) | 0.011 |
| Scale: 1L = | 0,28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | |
| QA Type | |

| Client: | RaR | | | |
|---|---------|--|--|--|
| Sample Type (A=Air, D=Dust): | A | | | |
| Air volume (L) or dust area (cm2) | 960 | | | |
| Date received by lab | 8-18-11 | | | |
| Lab Job Number: | 219017 | | | |
| Lab Samole Number: | 782928 | | | |
| F-Factor Calculation (Indirect Preps Only): | | | | |

Fraction of primary filter used

Total Resuspension Volume (ml)

Volume Applied to secondary filter (mt)

| Analyzed by | AH |
|---|----------------|
| Analysis date | 8-24-11 |
| Method (D=Direct, I=Indirect, IA=Indirect, ashed) | D D |
| Counting rules (ISO, AHERA, ASTM) | Ahera |
| Grid storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

| Grid | Grid Grid Opening | | Structure No. of Structures | | Dimensions | | Identification | Mineral Class | | | | 1 = yes, blank = no | | |
|------|-------------------|---------------|-----------------------------|-------|------------|--------|----------------|----------------|------|-----|-----------------|---------------------|-------|----------|
| Gild | Grid Opening | Type | Primary | Total | Length | Width | identification | Amphibole_ | С | NAM | Sketch/Comments | Sketch | Photo | EDS |
| A | 653 | AN | | | | | | · | | | | | · | |
| | F5-6 | \mathcal{N} | | - 1 | | | | | | | | | | <u>.</u> |
| | F5-3 | M | | Crec | A: '7 | 5 /01 | ntact | 3-5 G 3-5 G | lebo | S_ | | | | |
| | E5-6 | 2 | | , | B:0 | اء ` ا | intact | 3-56 | det | 2 | | | | |
| B | 65-1 | M | | | | | | | | | | | | |
| | 64-3 | M | | | | | · | | | | | | | |
| | F3-6 | α | | | | | | | | / | | · | | |
| | F3-3 | M | | | | | | 70 | | | | | | |
| | | | | | | | | 7 | · | · | | • | | |
| | | | | | | | | | | | | | | |

| Reservoirs | Environmental, | inc. |
|------------|------------------|------|
| TEM Asbes | tos Structure Co | ount |

| Laboratory name: | REI |
|-----------------------------|--------------|
| Instrument | JEOL 100 N S |
| Voltage (KV) | 100 KV |
| Magnification | (20KX 10KX |
| Grid opening area (mm2) | 0.011 |
| Scale: 1L = | 0.28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | |
| QA Type | · |

| Client : | RAR | | | | |
|---|---------|--|--|--|--|
| Samole Type (A=Air, D=Dust): | A | | | | |
| Air volume (L) or dust area (cm2) | 960 | | | | |
| Date received by lab | 8-18-11 | | | | |
| Lab Job Number: | 219017 | | | | |
| Lab Sample Number: | 782929 | | | | |
| F-Factor Calculation (Indirect Preps Only): | | | | | |

Frection of primary filter used

Total Resuspension Volume (ml)

Volume Applied to secondsry filter (ml)

| Analyzed by | AH |
|---|----------------|
| Analysis date | 8-24-11 |
| Method (D=Direct, i=Indirect, IA=Indirect, ashed) | D |
| Counting nales (ISO, AHERA, ASTM) | Ahera |
| Grid storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

| | | Christian | | | | <u> </u> | <u> </u> | | | | | | | |
|------|--|-----------------------|-----------------------|---------------------------------------|--------|----------|----------------|---------------|-------|------|-----------------|--------|--------------------|-----|
| Grid | Grid Opening | Structure Type | No. of Str Primary | | l | nsions | Identification | Mineral Class | | | | | es, blank Photo | EDS |
| | | 4 . | | Total | Length | Width | | Amphibole | С | NAM | Sketch/Comments | Sketch | FIIOLO | |
| A | F6-6 | W.7 | | | | | | | | | | | | |
| | Fle-3 | MZ | | ••. | | | | | | | • | | | |
| | E6-6 | ND | | Pra | A: | 60 | , intac | × 3-5 | 90 | lebr | <u>ح</u> | | | |
| | E6-3 | MΩ | | Pien | B1 | Pier | A | | | | | · | | |
| | (6-6) | $\triangle \triangle$ | | · · · · · · · · · · · · · · · · · · · | | | | | | | | | | · . |
| B | H4-4 | ND | | | | | | | , | | | | | |
| | H4-1 | MD | | | | |) | | | | | | | |
| | 64-4 | MD | | | | | | / | | · | | | | |
| | · | | | | | V | | · | | | | | | |
| | | | | <u>-</u> | | | | | | | | | |] |

| Laboratory name: | REI |
|-----------------------------|---------------|
| Instrument | JEOL 100 N(S) |
| Voltage (KV) | 100 KV |
| Magnification | (20K)X 10KX |
| Grid opening area (mm2) | 0.011 |
| Scale: 1L = | 0,28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | 555 |
| QA Type | |

| | artaro ocuit |
|-----------------------------------|--------------|
| Client: | RAR |
| Sample Type (A=Air, D=Dust): | A |
| Air volume (L) or dust area (cm2) | 928 |
| Date received by lab | 8-18-11 |
| Lab Job Number: | 219017 |
| Lab Samole Number: | 782930 |
| • | |

| Analysis date | 27-11 |
|-------------------------------|----------------|
| Method (D=Direct, I=Indirect, | |
| IA=Indirect, ashed) | _1ロ |
| Counting rules | 1.41 |
| (ISO, AHERA, ASTM) | Ahera |
| Grid storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

Analyzed by

| F-Factor Calculation (Indirect P | reps Onl | y): | |
|---|----------|-----|--|
| Frsction of primary filter used | | | |
| Total Resuspension Volume (ml) | | | |
| Volume Applied to secondary filter (ml) | | | |

| Grid | Grid Opening | Structure | No. of St | ructures | Dime | ensions Identificalia | | Mineral Class | | | | 1 = yes, blank = no | | |
|-------|--------------|-----------|-----------|----------|--------|-----------------------|-----------------------|---------------|------|-----|-----------------|---------------------|-------|-----|
| 0.110 | Gila Opening | Туре | Primary | Total | Length | Width | i de i di i de i di i | Amphibole | С | NAM | Sketch/Comments | Sketch | Photo | EDS |
| A | 144-1 | CV | | | | | | | | | | | | |
| | 64-4 | an | | | | | | | | | | | | |
| | 64-1 | M) | | Piec | A: 90 | | itad | 3 % d | e br | ζ | | | | |
| | F4-4 | \wedge | | Pien | B | P | A | · | | | | | | |
| B | H3-6 | ND | | | | | V' | | | | | | | |
| | H3-3 | Δ | | | | | | | | | | | | |
| | 636 | 2 | | | (| | , | | | | | · | | |
| | 63-3 | 2 | | | 6 | | | | 1 N | | | | | |
| | | T - m | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

| | 1 |
|-----------------------|--------------|
| Laboratory name: | REI |
| instmment | JEOL 100 N S |
| Voltage (KV) | 100 KV |
| Voitage (KV) | 100 KV |
| Magnification | 20KX i0KX |
| Grid opening area | |
| (mm2) | 0.011 |
| Scale: 1L = | 0.28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area | |
| (mm2) | 385 |
| Secondary Filter Area | <u> </u> |
| (mm2) | l |
| QA Type | · |

| Client : | RAR |
|-----------------------------------|---------|
| Sample Type (A=Air, D=Dust): | A |
| Air volume (L) or dust area (cm2) | 926 |
| Date received by lab | 8-18-11 |
| Lab Job Number: | 219017 |
| Lab Sample Number: | 782931 |
| | |

| | |
|---|-------------|
| F-Factor Calculation (Indirect Pr | reps Only): |
| Fraction of primary filter used | |
| Total Resuspension Volume (ini) | |
| Volume Applied to secondary filter (ml) | |

| | 44 |
|-------------------------------|----------------|
| Analyzed by | / / / / / |
| Analysis date | 8-24-11 |
| Method (D=Direct, I=Indirect, | |
| IA=Indirect, ashed) | |
| Counting rules | 41 |
| (ISO, AHERA, ASTM) | Ahera |
| Grid storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

| Grid | Grid Opening | Structure | No. of Str | uctures | Dime | nsions | Identification | Mineral Class | | | | 1 = yes, blank = no | | = no |
|------|--------------|-----------|------------|---------|--------|--------|----------------|---------------|------|-----|-----------------|---------------------|-------|------------|
| | | Туре | Primary | Total | Length | Width | | Amphibole | С | NAM | Sketch/Comments | Sketch | Photo | EDS |
| A | 64-4 | MD | | | | | | | | | | | | |
| | 64-1 | ND | | | | | | | | | • | | | |
| | Fy-cl | MD | | 50 | A: | 80% | intac | 57 | l de | bas | | | | |
| | FUI | 2 | | Pre | B: | 608 | intact | | lehr | ſ | | | | |
| B | F1-3 | NO. | | | | | | · | | | | | | |
| | B3-6 | ND | | | | | | | | | | | | |
| | B3-3 | MD | | | | | | | • | | | | | |
| | A36 | ND | | | _ | | | | | | | | | |
| | | · | | | | | | | | | | | | |
| | | | | | | · | 70 | | | | | | | |
| | | | • | | | | | | | | | | | Rev 3-2009 |

| Laboratory name: | REI |
|-----------------------------|------------|
| Instmment | JEOL 100 N |
| Voltage (KV) | 100 KV |
| Magnification | 20KX 10KX |
| Grid opening area (mm2) | 0.011 |
| Scale: 1L = | 0,28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | |
| QA Type | |

| RAR |
|---------|
| A |
| 928 |
| 8-18-11 |
| 219017 |
| 782932 |
| |

| Analyzed by | Alt |
|---|----------------|
| Analysis date | 8-24-11 |
| Method (D=Direct, I=Indirect, IA=Indirect, ashed) | ۵ |
| Counting rules (ISO, AHERA, ASTM) | Ahera |
| Grkf storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

| F-Factor Calculation (Indirect Pr | eps C | niy): | |
|---|-------|-------|--|
| Fraction of primary filler used | | | |
| Total Resuspension Volume (ml) | | | |
| Volume Applied to secondary filter (ml) | | | |

| Grid | Grid Opening | Structure | No. of St | mctures | Dimensions | | Identification | entification Mineral Class | | | | 1 = yes, blank = no | | |
|------|--------------|-----------|-----------|---------|------------|-------|----------------|----------------------------|------|-----|-----------------|---------------------|-------|-----|
| ···- | | Туре | Primaty | Total | Length | Width | | Amphibole | С | NAM | Sketch/Comments | Sketch | Photo | EDS |
| A | E4-6 | MD | | · | | | | | | | | | · | |
| | E43 | DV | | ٠. | | | | | | | | | | |
| | C4-6 | an | | Pien | A: | 90% | intact | 3-5 /3 | deb. | ی | | | · | |
| | c4-3 | 10 | | Pien | B: | 80% | intac | - 0 | | r | | | | |
| B | E3-6 | \sim | | P | | | | | | | | | | |
| | E3-3 | 2 | | | | | | | | • | | | | |
| | C36 | 2 | | | | 1 | | | | | | | | · · |
| | C3-3 | 5 | | ` | 1 | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

| Laboratory name: | REI |
|-----------------------------|----------------|
| Instrument | JEOL 100 N (S) |
| Voltage (KV) | 100 KV |
| Magnification | 20KX 10KX |
| Grid opening area (mm2) | 0.011 |
| Scale: 1L = | 0.28 um |
| Scale: 1D = | 0.056 um |
| Primary filter area (mm2) | 385 |
| Secondary Filter Area (mm2) | |
| QA Type | |

| RAR |
|---------|
| A |
| 930 |
| 8-18-11 |
| 219017 |
| 782933 |
| |

| Analyzed by | AIT |
|---|----------------|
| Analysis date | 8-4-11 |
| Method (D=Direct, I=Indirect, IA=Indirect, ashed) | D |
| Counting rules (ISO, AHERA, ASTM) | Ahera |
| Grid storage location | Month Analyzed |
| Scope Alignment | Date Analyzed |

| F-Factor Calculation (Indirect Pr | reps Only): |
|---|-------------|
| Fraction of primary filter used | |
| Total Resuspension Volume (ml) | |
| Volume Applied to secondary filter (ml) | |

| Grid | 0-14 0 | Structure | No. of St | ructurės | Dimensions | | Dimensions | | Dimensions | | Dimensions | | Dimensions | | Dimensions | | ld - A'C - A' | Mineral Class | | | | 1 ≈ yes, blank = no | | |
|------|--------------|-----------|---------------|----------|------------|------|----------------|-----------|------------|----------|-----------------|-----------|------------|------|------------|--|---------------|---------------|--|--|--|---------------------|--|--|
| Grid | Grid Opening | Туре | Primary Total | | Length | | Identification | Amphibole | С | NAM | Sketch/Comments | Sketch | Photo | EDS | | | | | | | | | | |
| A | C5/3 | DN | | | | | | | | | | .* | · | | | | | | | | | | | |
| | B5-6 | Δ | | | | | | | | | | | | | | | | | | | | | | |
| | B5-3 | ND | | Piert | : 90 | 9/11 | tact | 3-5 % | leb. | <u> </u> | | · | | | | | | | | | | | | |
| | A5.6 | M | | Cies | B: 7 | 0% | ntact | 3-5% | leh | ري | . · | | | | | | | | | | | | | |
| B | E5-4 | DN | | | | | | | | · | | | | | | | | | | | | | | |
| | E5-1 | ND | | | | | | | | , | | ļ <u></u> | | | | | | | | | | | | |
| | C5-4 | ND | | | | | · · · | | | · | | | · | | | | | | | | | | | |
| | C5-1 | W | | | 1 | • . | | | | | · | | | | | | | | | | | | | |
| | · | · | | | 7 | | | | | | • | • | | | | | | | | | | | | |
| | | | | , | | | | · | · | | | | | | | | | | | | | | | |

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, $mm^2 = \# GO \text{ counted } x \text{ Average } GO \text{ Area } (mm)$

Concentration, $s/cc = \frac{\# \text{ Asbestos Structures}}{\# \text{ GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{1L}{\text{1000cc}}$

Filter loading, $s/mm^2 = \frac{\# Asbestos structures}{Area Analyzed (mm^2)}$

GO = TEM grid opening

CONTRACTOR IMPLEMENTATION PLAN OF THE THIRD WEST SUBSTATION 2011 UPGRADE PROJECT WORK PLAN JUNE 2011



Cache Valley Electric Co.

2345 South John Henry Dr. ● P.O. Box 27444 ● Salt Lake City, Utah 84119

TABLE OF CONTENTS

| Introduction | 4 |
|---|---|
| Work Zones and Phasing Plan | 4 |
| Work Zones | 4 |
| Phasing Plan | 4 |
| Phase I | 4 |
| Phase II | 4 |
| Phase III | 5 |
| Phase IV | 5 |
| Phase V | 6 |
| Controls, Processes and Procedures | 6 |
| Exclusion Fencing | 6 |
| Air Monitoring | 6 |
| Dust Control | 6 |
| Storm Water Pollution Prevention Plan (SWPPP) | 7 |
| Contaminated Soil Disposal | 7 |
| Material Disposal Tracking | 7 |
| Ingress/Egress Process and Procedure | 7 |
| Access Control | 7 |
| Exclusion Zone Personnel | 7 |
| Exclusion Zone Vehicular | 7 |
| Non-Exclusion Zone Personnel | 8 |
| Non-Exclusion Zone Vehicular | 8 |
| Material Handling | 8 |
| Personal Protective Equipment (PPE) | 8 |
| Exclusion Zone PPE | 8 |
| Non-Exclusion Zone PPE | • |
| Injuries | 8 |
| Life Threatening Injuries | 8 |
| Other Injuries | 9 |
| Temporary Facilities | |
| Sanitary Facilities | 9 |
| Potable Water | |

| Communication | 9 |
|---------------|----|
| Closeout | 9 |
| Exhibit 1 | 11 |
| Exhibit 2 | 12 |
| Exhibit 3 | 13 |

INTRODUCTION

This document is an implementation plan to the Third West Substation 2011 Upgrade Project Work Plan June 2011, reviewed by the Utah Department of Environmental Quality and Environmental Protection Agency. This implementation plan is intended to more fully detail the means and methods to be implemented to meet the criteria set forth by OSHA, EPA, DEQ, and any local and state requirements and to meet all criteria identified in the work plan.

The means and methods below were created based on available information and known site conditions. If site conditions change, means and methods will be immediately communicated to Joyce Ackerman and Craig Bamitz prior to implementation.

WORK ZONES AND PHASING PLAN

WORK ZONES

To facilitate construction activities and limit personnel exposure, the site will be divided into three work zones. Proposed work zones are delineated and attached as Exhibits 1, 2, and 3 following this document.

Work zones will delineate between exclusion zones and non-exclusion zones. Depending on the phase of work, each zone will carry either designation (exclusion and non-exclusion).

On-site delineation will be an exclusion zone barrier between exclusion zones and other work zones to control the movement of personnel and control the migration of contaminated material. Specific access control and entry requirement is detailed later in this document.

PHASING PLAN

PHASE I

Remove superstructures, bus, and any equipment that does not require soil disturbance. This work will occur in all three work zones. This phase will take approximately two-three weeks.

PHASE II

Zone 1

Zone 1 will be the exclusion zone during Phase II of the work (see Exhibit 1). All construction activities that will disturb the soil will be completed during this phase. This includes duct bank, footings and foundations, ground grid, conduit, and cable tray. Upon completion of this phase, the entire zone will be stabilized and no further controlled work will be required.

Zone 1 will be delineated from the other zones using fencing as detailed further in this document.

Zone 2

In parallel with work in Zone 1 excavation, footings and foundations, conduit, and ground grid will be installed in the clean fill in Zone 2. All excavations will be done in bank run that was hauled in during 2005 work. The area that was cleaned will be marked out and delineated; after delineation we will establish the clean area 10' offset to the inside to ensure that no contaminated soil will be disturbed.

Zone 3

No work disturbing soils is anticipated at this time.

This phase will take approximately four-six weeks.

PHASE III.

Zone 1

This area is now stabilized. No work disturbing soils is anticipated at this time.

Zone 2

During Phase III this will now be the exclusion zone. We recognize that the majority of Zone 2 has been remediated, in a previous project. All the work in the remediated area will take place prior to disturbing any of the contaminated soils. Once this portion of Phase 2 is complete, we will begin work removing the existing foundations and placing new footings and foundations, conduits, and ground grid.

The zone will be fenced with the temporary fence and the plastic sheeting to delineate Zone 2 from the remainder of the yard. The shower house and the clean room will not move at this time however the entry and exit will change in order to move the workers from an active zone (2) to an inactive zone (1). This will allow for the ingress and egress of personnel. See Exhibit 2 for approximate control locations.

Vehicular Access to allow trucks to haul material from the exclusion zone will be from a gate installed on the East fence (see Exhibit 2) with the controls described later in this document.

Zone 3

No work disturbing soils is anticipated at this time.

This phase will take approximately four-six weeks.

PHASE IV

Zone 1

This area is now stabilized. No work disturbing soils is anticipated at this time.

Zone 2

This area is now stabilized. No work disturbing soils is anticipated at this time.

Zone 3

Fencing will be erected per the controls in this document. The clean room will be relocated to the east end of Zone #3.

Work in this area will include the foundation removal and the installation of the new foundation, building removal and all the grounding, conduit and the necessary grading to finish the sub and stabilize the soils.

This phase will take approximately four-six weeks.

PHASE V

Entire site is stabilized. No soil disturbing work remains. Air monitors, dust control, and SWPPP will continue until work is complete. Fence with plastic sheeting and steel plate access will be removed.

Zone 1

This area is now stabilized. No work disturbing soils is anticipated at this time.

Zone 2

This area is now stabilized. No work disturbing soils is anticipated at this time.

Zone 3

This area is now stabilized. No work disturbing soils is anticipated at this time.

This phase will take approximately ten-twelve weeks.

CONTROLS, PROCESSES AND PROCEDURES

EXCLUSION FENCING

Fencing will be constructed using a 10 foot tall chain link fence covered with plastic sheeting. The fencing will be inspected and maintained to ensure the integrity of the plastic sheeting. The fencing will be a contiguous delineation with controlled ingress and egress for personnel and equipment.

Fencing will be relocated and reconstructed according to the phasing plan.

Air Monitoring

Air monitors will be placed on the fence at the extents of the site work. Samples will be shipped ovemight to be analyzed within 48 hours of the work. Air monitoring will be used to ensure the implemented controls are working as designed.

DUST CONTROL

Dust will be controlled by pre wetting excavation areas prior to digging. Water will also be sprayed during excavation as needed. All trucks will be washed down after being loaded over a raised ramp with a closed containment below. This truck wash out ramp is moveable and will be phased into exclusion zones as needed. An additional power washer will be onsite in the event track out needs to be mitigated.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

A SWPPP will be created and filed as required under the UPDES/NPDES General Permit.

Any storm water, and all other water used in processing, will be stored on-site and treated prior to discharge. Captured solids and filters will be disposed of per the disposal procedure in this document.

CONTAMINATED SOIL DISPOSAL

MATERIAL DISPOSAL TRACKING

Material hauled from the site will be disposed at sites permitted to handle regulated material. Truck receipts will be tracked and provided to PacifiCorp's Quality Assurance Inspector on a daily basis.

INGRESS/EGRESS PROCESS AND PROCEDURE

ACCESS CONTROL

To gain entrance on-site, personnel will check into the gate personnel. Proper training credentials will be verified prior to granting entry into the work zone. To enter any part of the work zone, except by exceptions below noted, personnel will need 4-hour asbestos awareness training. Personnel who will enter the exclusion zone will take the HAZWOPER training course. Project hard hat stickers have been obtained and will be fastened onto hard-hats; non-trained individuals will be conspicuous as they will not have the stickers.

Sign-in access sheets will be maintained at the jobsite or available electronically from PacifiCorp. The sign-in sheet will include name, company, training qualifications, and work zone.

The only exceptions to the training are vendors whose involvement is ancillary to the controlled work. Examples of which are steel fabricators, concrete suppliers, sanitary facilities, emergency personnel, etc.

EXCLUSION ZONE PERSONNEL

Personnel will enter the exclusion zone via the Clean Room. Upon entry personnel will suit up in the appropriate PPE cross through the clean room into the exclusion zone.

Personnel will exit the exclusion zone via the Clean Room. Personnel will enter the clean room, wash/shower head, face, and mask, remove mask, disrobe, and shower. After a shower they will dress in regular clothes and leave the site.

EXCLUSION ZONE VEHICULAR

Truck loading areas will be created within the exclusion zones to facilitate the export of material. Steel plates will be placed on the ground from the non-exclusion zones into the exclusion zones where loading will occur. The plates will keep the tires from tracking any controlled material.

Truck beds will be lined with plastic sheeting prior to loading material. Material will be placed atop the plastic sheeting and the sheeting will be folded over the export, taped closed, and covered with transport tarp.

Trucks will then be washed to remove any other material from the vehicle prior to backing out of the site. Water from the washing will be captured and processed for reuse or disposal.

Truck Drivers will not be allowed to exit the vehicle at any point while in the exclusion zone, windows shall remain closed. All prepping, loading, covering, and washing will be performed by personnel with HAZWOPER training in full exclusion zone personal protection equipment. As such, truck drivers will not be HAZWOPER trained.

NON-EXCLUSION ZONE PERSONNEL

Access to the non-exclusion zone will be limited to personnel who have taken Asbestos Awareness training, verified against the training list, and who are wearing the appropriate PPE.

NON-EXCLUSION ZONE VEHICULAR

Vehicular access will not be controlled in the non-exclusion zones, only that the operators are asbestos awareness trained, with the exception of ancillary work from suppliers, etc.

MATERIAL HANDLING

Concrete will be pumped into the exclusion zones. Pump trucks will be set up in non-exclusion zones or outside the work zone where the concrete truck will place concrete into the hopper from the chute. Hoses exposed to contamination will be sprayed off before swinging the boom outside the exclusion zone.

Reinforcing steel, formwork, etc will be placed into the exclusion zone via the haul truck washout area or a temporary opening in the fence. Equipment or personnel in the exclusion zone will perform the final placement.

Equipment and material deliveries will be allowed in the stabilized areas without exclusion zone controls.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

EXCLUSION ZONE PPE

At a minimum, personnel will be wear Tyvek suits and breathing masks with 3M style filters, safety glasses, safety-toed boots, and hard hats. Personnel will adjust other PPE as required to safely perform the work in accordance with 29 CFR 1926.

NON-EXCLUSION ZONE PPE

At a minimum, personnel will be wear long, natural fiber pants, fire retardant shirts, safety glasses, steel toed boots, and hard hats. Personnel will adjust other PPE as required to safely perform the work in accordance with 29 CFR 1926.

INJURIES

LIFE THREATENING INJURIES

If a life threatening emergency occurs in the exclusion zone all work will be stopped and the site will be stabilized as possible. Emergency personnel will be allowed to access the site as required

to stabilize and transport the injured from the site. Reasonable efforts to contain and remove any contaminants leaving the site with the injured or emergency personnel will be taken.

OTHER INJURIES

For all non-life threatening emergencies where the injured can be processed out either alone or with assistance the standard egress procedure will be followed.

TEMPORARY FACILITIES

SANITARY FACILITIES

Exclusion Zone Sanitary Facilities

Sanitary facilities will be placed within the exclusion zone adjacent to the clean room. This facility will be used for urination only. Personnel will wash their hands prior to entering the facility.

Personnel will egress via the clean area and wash off any particulate before exiting the exclusion zone for defecation.

Sanitary facilities inside the work zone will be washed down prior to access by maintenance personnel. The maintenance personnel will access the sanitary facility via a temporary removal of control fence and remove the waste. The fence will be replaced and work will continue.

Non-Exclusion Zone Sanitary Facilities

Sanitary facilities will be placed around the site as needed to accommodate efficient work. Normal maintenance and access is anticipated.

POTABLE WATER

Exclusion Zone Potable

Capped water will be transported into the clean room for personnel consumption. Personnel will shower their mask and head as well as wash their hands prior to consuming water in the exclusion zone.

Non-Exclusion Zone Potable Water

No special controls are required.

COMMUNICATION

Contractor will communicate from the exclusion zone to the non-exclusions zone using two-way radios. Radios in the exclusion zone will be disposed of at the end of the work.

CLOSEOUT

Upon completion of the all work in the exclusion zone equipment will be washed on the haul road plates removing any contaminated material. When all material has been removed the equipment will be removed from the project.

Temporary facilities will be cleaned prior to finishing the project. This includes the sanitary facilities, clean room, etc. The exclusion zone delineation will become vague as the tear down occurs. The site will be stabilized except for the wash zone where the facilities will be located for

cleaning. After cleaning the plates will be cleaned and removed and the contaminated washout will be removed and disposed of at a permitted site.

The entire project will be stabilized at that time and no further controls will be needed as part of this work.

Ехнівіт 1

EXHIBIT 2

Ехнівіт 3